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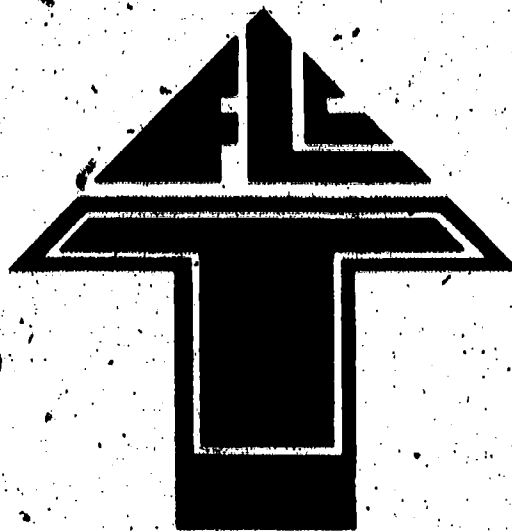
ABSTRACT

Intended to assist both the private and public sectors to locate and utilize technological expertise within the federal laboratories, this directory lists the federal laboratories and centers that are affiliated with the Federal Laboratory Consortium and describes the area of technological expertise they can make available to solve problems. This document updates the September 1978 volume by supplying revised pages and new sections with instructions on where to attach the new sheets and which old sheets to replace. The body of the document is organized into five sections: (1) a map that identifies the six geographic regions that comprise the consortium; (2) an alphabetical list of the consortium laboratories, including a detailed listing of the technology application areas that exist at these laboratories and brief descriptions of the specific work that is being done in each area; (3) a list of the member laboratories by geographic region, grouped under the federal department to which they belong and identified by city and state; (4) another geographic listing of the member laboratories, arranged alphabetically under each region by name and including the name of the consortium representative for each, with his address and telephone number; and (5) a general index, listing general application areas alphabetically, under which more specific sub-areas are identified; for each sub-area, the laboratories having that particular expertise are listed by acronym or abbreviation.
 (Author/JD)

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FEDERAL LABORATORY CONSORTIUM

RESOURCE DIRECTORY

November 1979

**Prepared by
the**

FEDERAL LABORATORY CONSORTIUM

With the support of the

**INTERGOVERNMENTAL SCIENCE &
PUBLIC TECHNOLOGY DIVISION**

**OF THE
NATIONAL SCIENCE FOUNDATION**

NSF/RA-79-0268

FEDERAL LABORATORY CONSORTIUM
RESOURCE DIRECTORY
(NSF-77-047)

SEPTEMBER 1979 UPDATE

In order to update the directory and make it more useful and at the same time to avoid reprinting the entire volume, we are supplying revised pages and new sections. Add the attached sheets to your directory, dated September 1978, and replace obsolete sheets, as directed below. (Note that Section II now begins with page II-25.)

- Add note to cover: Revised, September 1979.
- Remove all green divider sheets.
- Add pp. i-iv (Contents).
- Remove pp. 1 through 4; add new pp. 1 through 3.
- Add Section I divider sheet before p. I-1.
- Remove pp. I-1 through I-36; add new p. I-1.
- Remove pp. II-1 through II-23 and discard.
- Add Section II divider sheet before p. II-25.
- Add pp. II-36a through II-36c after p. II-35.
- Replace pp. II-37 and -38.
- Replace p. II-41 through II-44.
- Replace p. II-53.
- Replace p. II-57.
- Remove pp. II-69 through II-76 and discard.
- Replace pp. II-81 and -82.
- Replace p. II-91 through -96 with pp. II-91 through II-96f.
- Add pp. II-98a through -98c after p. II-97.
- Replace p. II-103.
- Add pp. II-108a and II-108b after p. II-107.
- Replace pp. II-109 and -110.
- Replace pp. II-113 through II-116.
- Add pp. II-118a through -118c after p. II-117.
- Remove pp. II-119 and -120 and replace with II-119 through II-120c.
- Replace pp. II-151 and -152.
- Replace pp. II-177 and -178.
- Replace pp. II-181 through II-190.
- Replace pp. II-193 and -194.
- Add pp. II-196a and -196b after II-196.
- Replace pp. II-219 and -220.
- Replace p. II-223.
- Replace pp. II-233 and -234.
- Replace pp. II-239 through II-241.
- Replace pp. II-251 through II-254.
- Replace pp. II-259 through II-264 with pp. II-259 through II-260.
- Replace pp. II-275 through -278.

Replace pp. II-283 through -286.
Replace pp. II-303 and -304.
Replace pp. II-313 and -314.
Replace pp. II-323 through -326.
Add pp. II-328a and -328b after p. II-327.
Replace pp. II-331 and -332.
Replace p. II-335.
Replace p. II-339.
Replace pp. II-345 and -346.
Remove pp. III-1 through III-23.
Add new Section III (pp. III-1 through III-12) and divider sheet.
Add new Section IV (pp. IV-1 through IV-10) and divider sheet.
Add new Section V (pp. V-1 through V-23) and divider sheet.

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AFML U.S. Air Force Materials Laboratory	II-39
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AFWL Air Force Weapons Laboratory	II-45
AMD USAF Aerospace Medical Division	II-49
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AMRDC Army Medical Research and Development Command	II-59
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BIFC Boise Interagency Fire Center	II-65
BNL Brookhaven National Laboratory	II-67
CEL Civil Engineering Laboratory	II-77
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CGRDC Coast Guard Research and Development Center	II-91

CSL	Chemical Systems Laboratory	II-93
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LBL	Lawrence Berkeley Laboratory	II-173
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NBL	Naval Biosciences Laboratory	II-227
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NOO	U.S. Naval Oceanographic Office	II-241
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NWSC	Naval Weapons Support Center	II-305
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PNW	Pacific Northwest Forest and Range Experiment Station	II-315
PSW	Pacific Southwest Forest and Range Experiment Station	II-317
RADC	U.S. Air Force Rome Air Development Center . . .	II-319
RIBSS	Army Research Institute for the Behavioral and Social Sciences	II-325
RM	Rocky Mountain Forest and Range Experiment Station	II-327
SDEDC	USDA -- Forest Service Equipment Development Center - San Dimas	II-328a
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SL	Sandia Laboratories	II-331
SO	Southern Forest Experiment Station	II-337
TARADCOM	U.S. Army Tank - Automotive Research & Development Command	II-339
TSC	Transportation Systems Center	II-341
USGS	U.S. Geological Survey	II-343
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INTRODUCTION

Although there are many definitions of technology transfer within the Federal Laboratory Consortium, technology transfer is generally described as the process by which existing knowledge, facilities, or capabilities developed under federal R&D funding are transferred to fulfill actual or potential public or private needs.

The purpose of the Consortium is to increase the use of the member laboratories' unique technical expertise and R&D products toward the solution of problems facing other government agencies and private industry. This technology transfer program emphasizes person-to-person communications between the users and suppliers in the civilian sector and the resource people in the federal laboratories. The development of a well-organized information system and the continuous involvement of the users and suppliers in the problem definition and transfer process along with the discreet use of linking agents, or technology transfer "brokers," to bridge the communication gap between researchers and users represents the core program activity.

Within the Federal Laboratory Consortium, technology transfer is accomplished in a variety of ways. In one approach, one of the DoD Consortium laboratories may perform civilian-oriented R&D work with funding provided by such requesting institutions as federal, state, or local government agencies. These R&D projects are applied to civilian problems, but the solutions are based upon earlier research performed for mission-oriented purposes. Thus, the American taxpayer derives double benefit from the military R&D expenditure. Other members of the Consortium, such as DOE or EPA, are specifically chartered and funded to work in the civilian area. Therefore, they are directing their technology transfer efforts toward the increased use of their research results by decision makers and operational agencies in the public and private sectors.

In addition to performing R&D activities and pushing for greater use of their R&D products, the Consortium transfers its technology in other ways. Consortium representatives assist state and local government agencies in a variety of nonrefundable ways, such as serving on scientific advisory boards, acting as consultants to specialized groups (e.g., law enforcement, pollution control agencies, or fire prevention committees), providing library services, and identifying sources of surplus government equipment.

One major service provided by the Consortium is in the area of brokerage. Because of the nature of their activities, Consortium representatives are frequently exposed to new technologies developed by private enterprise, by state or local governments, or by another federal laboratory. Therefore, these technology transfer coordinators can serve as "technology brokers" by bringing together the individual or agency that has a problem or need with agencies who have already solved it or who at least are working in the area. This broker service can be especially useful for local governments who are often unaware of the scientific support available in the federal laboratories.

Private industry can also benefit from the Federal Laboratory Consortium. For example, through the acquisition of government patents originating from these laboratories, a private company can produce and sell a product in the commercial marketplace without having to expend funds for basic R&D. Perhaps most frequently, industry can benefit by becoming the continuing supplier of a service, process, or product initially demonstrated as satisfying a need by one or more of the Consortium laboratories.

How can the Federal Laboratory Consortium help your city department, county agency, state organization, or federal agency? What assistance can the Consortium give to your company? It is impossible to say unless there is a person-to-person contact between yourself and a member of the Consortium.

You may contact the Consortium laboratory representative nearest to you or the permanent Washington representative located in the Office of Intergovernmental Science and Public Technology, National Science Foundation. This representative maintains continuing contact with technology transfer in other federal, state, or local agencies as well as in private industry and assists in policy development relating to matters concerning the Consortium. Write or call the Federal Laboratory Program Manager, Room 1101, National Science Foundation, 1800 "G" Street NW, Washington, D.C. 20550 (telephone: 202-634-7996).

To bridge the present communication gap between the Consortium and you, a mechanism is required to provide you with information on the resource capability that exists within the federal laboratories. The Federal Laboratory Consortium Resource Directory was designed for this purpose.

This directory lists the federal laboratories and centers that are affiliated with the Federal Laboratory Consortium and describes their areas of technological expertise that can be made available to help solve problems. It has been compiled to assist you in locating and utilizing technological expertise within the federal laboratories.

Section I of this directory is a map that identifies the six geographic regions that comprise the Consortium. The dots on the map show approximate locations of many of the laboratories.

Section II, the core of the directory, contains an alphabetical list of the Consortium laboratories. A detailed listing of the technology application areas that exist at these laboratories is included, along with a brief description of the specific work that is being done in each application area.

At the back of the directory are several sections designed to aid you in finding the laboratories most likely to have the expertise you are looking for. Section III lists the member laboratories by geographic region. Under each region the laboratories are grouped by the federal government department they come under. The location of each laboratory is identified by city and state.

In Section IV, the member laboratories are again listed by geographic region. Under each region, they are listed alphabetically, along with the name of the Consortium representative for each laboratory, with his address and telephone number. Not included in Section II

are a few Consortium laboratories whose detailed listing of expertise was not obtained in time for incorporation into this revision. These laboratories are listed here in Section IV, along with their Consortium representatives, who may be contacted for detailed information.

The last section (Section V) is a general index. General application areas are listed alphabetically. Under each general listing, more specific sub-areas are listed. For each sub-area, a list of the laboratories having that particular expertise is given by the acronyms or abbreviations of the laboratories.

If you know the name of a laboratory you are looking for, you simply look it up alphabetically in the core of the directory. If it is not there, check in Section IV, and see if a representative is listed. If instead you know the application area and you want to find the laboratories associated with it, you look in Section V to find the abbreviations of the laboratories of interest. If you need to find what laboratories the abbreviations stand for, check the Contents (page i), which lists all of the labs in Section II by abbreviation and page number.

If you want to find a laboratory in a particular region, you can use the map in Section I and the listing in Section III to locate the laboratory. Section IV may be used to find the representative's name and address.

SECTION I.

MAP OF GEOGRAPHIC REGIONS

FEDERAL LABORATORY CONSORTIUM

FAR WEST
REGION

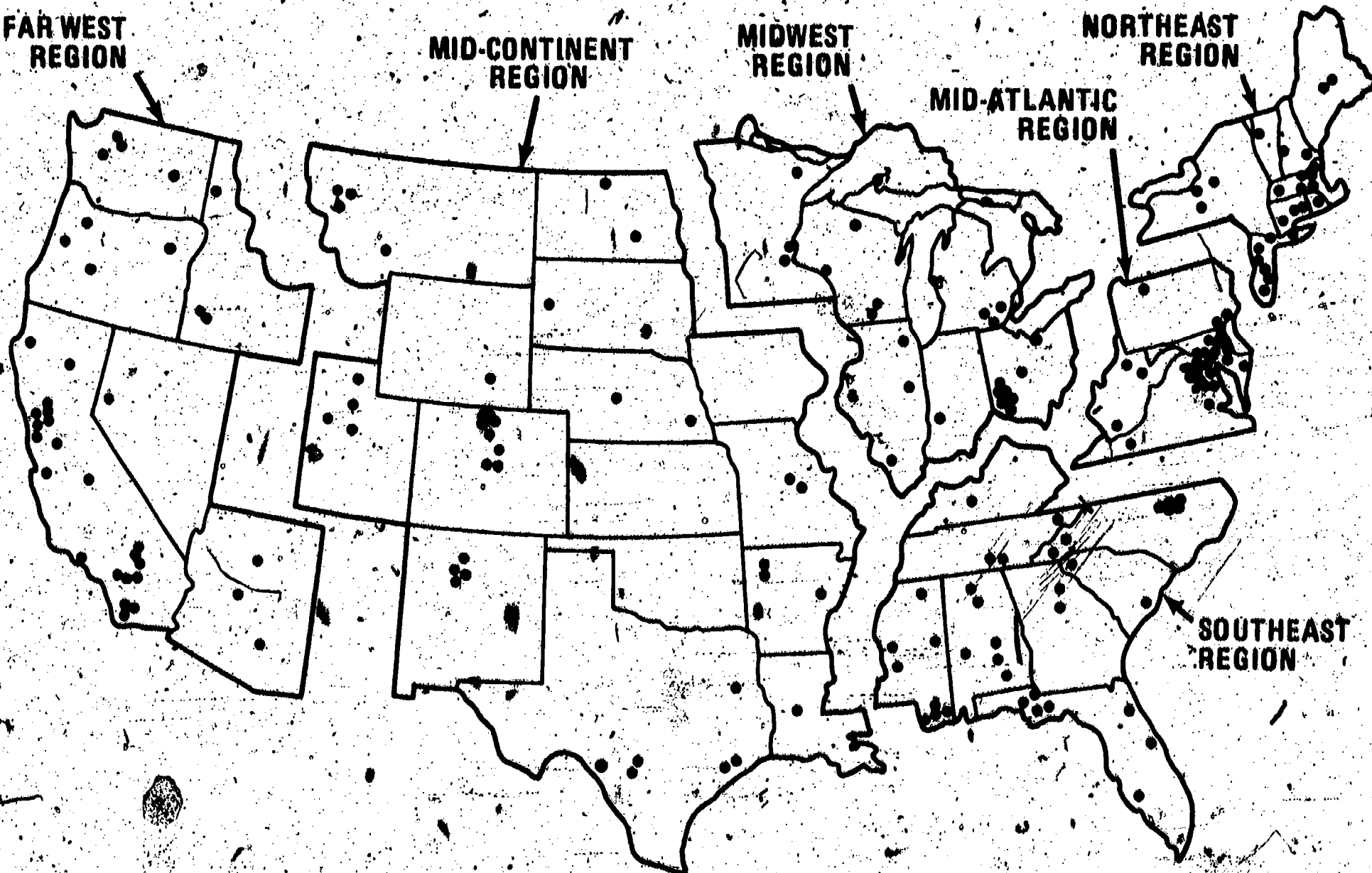
MID-CONTINENT
REGION

MIDWEST
REGION

NORTHEAST
REGION

MID-ATLANTIC
REGION

SOUTHEAST
REGION



SECTION II,

ALPHABETICAL LIST OF MEMBER LABORATORIES

AIR FORCE ENGINEERING AND SERVICE CENTER
ENGINEERING AND SERVICES LABORATORY
Tyndall AFB, Florida 32403

APPLICATION AREA

EXPERTISE

ADMINISTRATION

Research Program Administration
and Technology Transfer. . . .

Program planning, development, execution and management, contract management. Technology Transfer program.

CHEMISTRY

Analytical Chemistry.

Aqueous chemistry, atmospheric photochemistry, pollutant transport mechanisms, advanced pollutant monitoring technique development.

CIVIL ENGINEERING

Civil Engineering.

Airfield design and maintenance, water and wastewater treatment.

Construction Equipment,
Materials and Supplies.

Paving, road and air field materials.

Soil and Rock Mechanics.

Soil stabilization, airfield pavement evaluations.

ENERGY

Fuels.

Conversion of solid waste to energy.

Solar Energy.

Solar-assisted heat pumps, solar heating, solar cathodic protection.

Miscellaneous Energy Conversion
and Storage.

Wind generators and conversion, alternate energy for remote sites, solar-assisted heat for homes, waste heat recovery.

General.

Energy conservation techniques, energy monitoring and control systems.

Environmental Studies.

Environmental chemistry of alternate fuels.

APPLICATION AREA.

EXPERTISE

ENVIRONMENTAL POLLUTION AND CONTROL

- | | |
|---|--|
| Air Pollution and Control. | Air quality assessment modeling, aircraft engine emission measurements. |
| Solid Wastes Pollution and Control. | Optimum routing, recycling, resource recovery. |
| Water Pollution and Control. | Electroplating wastes, industrial wastes, photo waste, water quality assessment modeling, cascade water reuse, pollutant identification. |
| Environmental Impact Statements | Environmental engineering. |

INDUSTRIAL AND MECHANICAL ENGINEERING

- | | |
|----------------------------------|--|
| Nondestructive Testing | Airfield pavement evaluations, ultrasonic evaluation of delaminations and water in foam beam, and honeycomb aluminum panels. |
|----------------------------------|--|

MATERIALS SCIENCES

- | | |
|--|---|
| Corrosion and Corrosion Inhibition | Cathodic protection, protective coatings. |
|--|---|

NATURAL RESOURCES AND EARTH SCIENCES

- | | |
|--------------------------------------|---|
| Natural Resource Management. | Conservation and management plans for Air Force bases and ranges. |
| Forestry | Management plans for Air Force installations. |

PROBLEM SOLVING INFORMATION FOR STATE AND LOCAL GOVERNMENTS

- | | |
|---|-------------------------|
| Economic and Community Development. | Comprehensive planning. |
|---|-------------------------|

APPLICATION AREA

EXPERTISE

Police, Fire and Emergency
Services

Structural and crash rescue fire
equipment systems and techniques.
Advanced fire fighting agents,
pollution control fire fighting
agents.

Energy

Energy conservation, monitoring and
control systems, conversion of solid
waste to energy.

Environment

Environmental impact assessments,
pollution abatement systems, land
use planning.

TRANSPORTATION

Air Transportation

Evaluation of airfield pavement
roughness. Evaluation of skid re-
sistance characteristics of airfield
pavements techniques to improve skid
resistance, warm fog dispersal.

URBAN AND REGIONAL TECHNOLOGY AND DEVELOPMENT

Environmental Management and
Planning

Environmental planning, pollution
emission modeling, waste recycle and
resource recovery.

Transportation and Traffic
Planning

Comprehensive planning.

CONTACT:

Robert E. Brandon
Deputy Director, Engineering
and Services Laboratory
Tyndall AFB, Florida 32403
Telephone: (904) 283-5287
Autovon: 970-5287

AIR FORCE GEOPHYSICS LABORATORY
Hanscom Air Force Base
Bedford, Massachusetts 01731

APPLICATION AREA

EXPERTISE

ASTRONOMY AND ASTROPHYSICS

Astrophysics

Solar Physics

ATMOSPHERIC SCIENCES

Aeronomy

Meteorological Data Collection,
Analysis and Weather
Forecasting.

Atmospheric dynamics, densities and
winds as measured from satellites,
rockets and balloons and remote prob-
ing techniques. Expertise in assess-
ing weather and climate at remote
locations, in particular as affecting
aviation.

Meteorological Instruments and
Instrument Platforms

CHEMISTRY

Physical Chemistry

Application of physical chemistry
techniques such as mass spectrometers
and molecular beam apparatus to study
chemical reaction rates in the natur-
al atmosphere and stratosphere.
Studies of photochemical processes.

DETECTION AND COUNTERMEASURES

Infrared and Ultraviolet
Detection.

Nuclear Explosion Detection.

Optical Detection.

APPLICATION AREA

EXPERTISE

Seismic Detection.

ENVIRONMENTAL POLLUTION AND CONTROL

Air Pollution. Expertise in contamination of atmosphere by aircraft exhaust products or fuel dumping.

Environmental Impact Statement . Preparation of Environmental Impact Statements for Air Force systems.

NATURAL RESOURCES AND EARTH SCIENCES

Natural Resource Surveys Expertise in all phases of geodetics and gravity.

Geology and Geophysics Expertise in seismology and geology, crustal physics.

PHYSICS

Optics and Lasers. Expertise in infrared and passive microwave remote sensing, in particular as applied to atmospheric studies.

Radio Frequency Waves. Expertise in all aspects of ionospheric physics and electromagnetic propagation.

PROBLEM SOLVING INFORMATION FOR STATE AND LOCAL GOVERNMENTS

Environment.

CONTACT: John N. Howard
Air Force Geophysics Laboratory
Hanscom Air Force Base, MA 01731
Telephone: (617) 861-3601
Autovon: 478-3601

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IL-38

APPLICATION AREA

EXPERTISE

Lubricants and Hydraulic
Fluids

Chemical, mechanical and physical properties, performance, and production of all types of oils, lubricants, and hydraulic fluids; lubricant and hydraulic fluid additives.

Materials Degradation and
Fouling

Aging, erosion, wear, weathering, deterioration, decay; effects of radiation on materials; biodeterioration, including fungus deterioration; corrosion and corrosion inhibition; rusting; embrittlement; exfoliation.

Miscellaneous Materials

Leather, fur, refrigerants, straw, petroleum, waxes, etc.

Nonferrous Metals and Alloys

Microstructure, physical properties and mechanical properties.

Plastics

Development and characterization of new structural plastics and composites, structural adhesives and ablative plastics and composites.

Refractory Metals and Alloys

Physical metallurgy of refractory metals and alloys.

Solvents, Cleaners, and
Abrasives

Abrasive resistant coatings.

PHYSICS

Fluid Mechanics

Theoretical and experimental studies of the dynamics and statics of fluids and of relative motion between fluids and solid bodies. Includes aerodynamics and hydrodynamics.

CONTACT:

COL Martin Alewihe

Air Force Materials Laboratory

ATTN: AFML/NA

Wright-Patterson AFB, Ohio 45433

Telephone: (513) 255-4528

Autovon: 785-4528

U.S. AIR FORCE WRIGHT AERONAUTICAL LABORATORY
Wright Patterson AFB, Ohio 45433

APPLICATION AREA

EXPERTISE

AERONAUTICS AND AERODYNAMICS

Aerodynamics	Aerodynamic stability, flight mechanics, aerothermodynamics, gasdynamics, flight performance; structural materials studies--load bearing materials for wide applications to aerodynamic aircraft and missiles.
Aeronautics	Flight control; vehicle dynamics; vehicle subsystems; flight mechanics; structures; prototype.
Aircraft	Flight control; flight vehicle prototypes, vertical/short take-off and landing (V/STOL), remotely piloted vehicles; structures--flight loads, atmospheric turbulence, analysis methods, flight load sensors; flight mechanics.
Parachutes and Decelerators	Reentry systems.
Avionics	Solid state electronic device and integrated circuit technology; electro-optic device to provide the basic electronic elements.
Test Facilities and Equipment	Structures Test Facility; Fifty Megawatt Facility; Sonic Fatigue Facility; Landing Gear Test Facility.

MATHEMATICAL SCIENCES

Mathematical Logic	General competence.
Operations Research	All-weather landing systems, air cushion landing gear systems, cryogenic coolers, and inlet/nozzle/flight vehicle integration, and flight control system simulation.
Statistical Analysis	Concepts, data design criteria, and prediction and analysis techniques.

APPLICATION AREA

EXPERTISE

General. Stability and control design hand-
books, computer-based design tech-
niques, matrix structural analysis
techniques, flutter prediction
techniques.

PHYSICS

Structural Mechanics Dynamics and statics of solid bodies;
kinetics, kinematics, shock and vibra-
tion, stress analysis.

CONTACT: Mr. Rudy Beavin
U.S. Air Force Wright Aeronautical
Laboratory
Wright Patterson AFB, Ohio 45433
Telephone: (513) 255-2803
Autovon: 785-2803

APPLICATION AREA

EXPERTISE

Radio Frequency Waves

(Contd)

on RFR permissible exposure levels
and/or operational systems safety
criteria.

CONTACT: Major Joseph C. Crigler
Air Force Aerospace
Medical Division
AMD/RDX
Brooks AFB, TX 78235
Telephone: (512) 536-3406
Autovon: 240-3406

APPLICATION AREA

EXPERTISE

PHOTOGRAPHY AND RECORDING DEVICES

Holography Laser holography for NDT.

PHYSICS

Optics and Lasers. Laser effects on materials.

Solid State Physics. Basic research.

Structural Mechanics Mechanics of materials.

PROBLEM SOLVING INFORMATION FOR
STATE AND LOCAL GOVERNMENTS

Energy Review of heat losses.

CONTACT: R. L. Farrow, Chief
Technology Transfer Division
ATTN: Code DRXMR-PT
Army Materials And Mechanics
Research Center
Watertown, Massachusetts 02172
Telephone: (617) 923-3521
Autovon: 955-3521

APPLICATION AREA

EXPERTISE

NUCLEAR SCIENCE AND TECHNOLOGY

Nuclear Explosions and
Devices.

Study the damage effects of nuclear
explosions operation underwater and
above and below ground.

Design hardened air entrainment
systems.

Development of blast closure valves.

Development of air blast wave
attenuators.

Study alternate power systems for
hardened structures.

Design environmental control systems
for hardened structures.

OCEAN TECHNOLOGY AND ENGINEERING

Physical and Chemical
Oceanography.

Oil spills.

Marine Geophysics and Geology. .

Use of acoustics to determine geo-
logical and geotechnical aspects of
seafloor.

Oceanographic Vessels,
Instruments, and Platforms . . .

Current measurement systems. Buoyancy
Transport Vehicle that performs
functions of a seagoing forklift.

Construction Assistance Vehicle--a
diver-operated pickup truck.

Underwater Construction and
Habitats

Concrete habitats, acrylic plastic
habitats, moorings, cable arrays,
load handling systems, diver tools,
anchors, underwater mateable electri-
cal connectors, power transmission,
distribution and control systems,
seafloor excavation and trenching,
ocean cable protection.)

APPLICATION AREA

Underwater Construction and
Habitats (contd)

EXPERTISE

Design, analysis, construction, and
emplantment of structures on, in, or
suspended from the sea-floor, e.g.,
moorings, cable arrays, breakwaters,
concrete structures.

Acrylic plastic and concrete for use
in the ocean. Propellant driven
anchors; pontoon lift systems for
salvage work; diver heating systems;
and undersea diver tools.

Geotechnical investigations. Deter-
mination of sea-floor and terrestrial
geotechnical properties. Sea-floor
penetration and breakout. Anchor
holding capacity. Sea-floor founda-
tion design.

ORDNANCE

Detonation, Explosion Effects
and Ballistics.

Test and evaluation. Dynamic stru-
ctural response due to impact loading
from blast.

PHYSICS

Structural Mechanics.

Dynamics and statics of solid bodies,
kinetics, shock and vibration, stress
analysis (experimental and theoretical).

CONTACT: C. E. Parker
Code L03C
Civil Engineering Laboratory
Port Hueneme, California 93043
Telephone: (805) 982-4070
Autovon: 360-4070

COAST GUARD RESEARCH AND DEVELOPMENT CENTER
Avery Point, Groton, Connecticut 06340

APPLICATION AREA

EXPERTISE

CHEMISTRY

Analytical Chemistry

ENERGY

Solar Energy

ENVIRONMENTAL POLLUTION TECHNOLOGY

Marine Pollution Technology. . . Oil identification. Hazardous substance identification and quantification. Oil pollution trajectory forecasting. Oil pollution trajectory hindcasting. Spill prevention equipment (damage control). Spill containment devices. Hazardous chemical damage control and containment. /

NAVIGATION, GUIDANCE AND CONTROL

Marine Navigation Technology . . Aids to navigation. Solar power. Precision electronic navigation systems.

OCEAN TECHNOLOGY AND ENGINEERING

Domestic and Polar Ice Technology Ice theory as it applies to characterization of ice occurring in navigable waters. Field testing supporting polar and domestic icebreakers. Iceberg technology including size, distribution and deterioration. Physical oceanography relating to drift characteristics of ice. Ice physics. Cold region equipment.

Marine Fire and Safety Research Full scale ship fire testing. Boating safety. Examination of technology of equipment, application and physical/chemical processes of fires and fire

APPLICATION AREA

EXPERTISE

Search and Rescue Technology

fighting. System safety analysis as it applies to marine fire and recreational boating (RB) processes. Theoretical naval architecture, addressing RB problems. Automated data collection/processing and associated instrumentation.

Search and rescue equipment development. Rescue equipment technology, rescue techniques and search effectiveness. Application of operations research and modeling techniques for improved planning and resource allocation.

TRANSPORTATION

Marine Traffic Management

Vessel traffic management software. Microprocessor development. Computer assisted radar vessel tracking. Modularized computer display and processing techniques. Vessel traffic data acquisition system.

CONTACT: Michael D'Angelo
Asst. Director for Adm. and Services
Coast Guard Research and Development
Center

Avery Point, Groton, CT 06340
Telephone: (203) 445-8501

CHEMICAL SYSTEMS LABORATORY
Aberdeen Proving Ground, Maryland 21010

APPLICATION AREA

EXPERTISE

ADMINISTRATION

- Research Program Administration and Technology Transition . . . Experience in administration of multi-disciplinary basic and applied research programs and engineering programs.

AERONAUTICS AND AERODYNAMICS

- Aeroballistics Liquid filled projectiles.

ATMOSPHERIC SCIENCE

- Monitoring Instrumentation for monitoring atmospheric pollutants. Plant monitors, field monitors (automatic/portable). Devices to detect subhazardous concentrations of toxic materials in air, water, or on surfaces.

BIOMEDICAL TECHNOLOGY AND HUMAN FACTORS ENGINEERING

- Life Support Systems Individual and collective protection against chemical and biological aerosols.

CHEMISTRY

- Analytical Chemistry Broad capability in detection, identification, and analysis of compounds using a variety of modern techniques including gas chromatography, mass spectrometry (GC and ionic cluster), microanalysis, electron microscopy, atomic absorption, infrared, and Raman (Laser) analyses.
- Basic and Synthetic Chemistry . . . Synthesis of full range of organic compounds, and reactions of chemical compounds with human chemistry.

APPLICATION AREA

EXPERTISE

Industrial Chemistry and
Chemical Process
Engineering.

Pilot plants and process technology.

Physical and Theoretical
Chemistry

Physical property data, reaction
kinetics, and thermodynamics.

General.

Broad capability in basic and applied
research.

COMPUTERS, CONTROL, AND INFORMATION THEORY

Computer Software.

Preparation of computer programs to
predict aerodynamic stability of
liquid filled projectiles.
Nationwide use of UNIVAC 1108.

Pattern Recognition and Image
Processing

Use of chemometrics in reduction of
chemical data and correlation of
chemical structures to pharmacological
activity.

Use of pattern recognition techniques
to predict recovery or non-recovery
of shock-trauma patients.

DETECTION AND COUNTERMEASURES

Electromagnetic and Acoustic
Countermeasures.

Smokes and aerosols.

ENVIRONMENTAL POLLUTION AND CONTROL

Air Pollution and Control.

Real time air pollutant monitoring
and sampling techniques.

Environmental Impact
Statement.

Preparation, review, and evaluation.

APPLICATION AREA

EXPERTISE

Pesticides Pollution and Control

Water testing kits, decontamination and destruction.

Solid Wastes Pollution and Control

Decontamination and removal of hazardous materials.

Water Pollution and Control

Manufacturing residues from chemical plants, detection of residual contaminants, and sampling techniques.

General

Broad capability to perform research. Environmental surveys, pollution detection and monitoring, chemical treatment technology.

HEALTH PLANNING

Health Care Technology

Use of pattern recognition techniques to predict recovery of shock-trauma patients.

Use of Computer Man--a computer program for simulating wounding--and Casualty Data Bases to predict medical work loads.

LIBRARY AND INFORMATION SCIENCE

Information Systems

Retrieval of information on toxicological properties of chemical compounds, and chemical properties,

MATERIALS SCIENCES

General

Basic and applied research capability.

MATHEMATICAL SCIENCES

Statistical Analysis

Handling of data and design of experiments; univariate and multivariate statistical analysis; designed experiments; feasibility studies; hazard analysis; model building.

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APPLICATION AREA

EXPERTISE

Systems Analysis Comparative cost effectiveness studies; threat analysis; simulation.

MEDICINE AND BIOLOGY

Ecology Effects of pollutants on fauna, flora, etc.

Pharmacology and Pharmacological Chemistry . . . Treatment of poisoning by anti-cholinesterase compounds.

Toxicology Data bank on any known toxic compound.

ORDNANCE

Ammunition, Explosives and Pyrotechnics Riot control agents and dispersers. Noise, light, smoke and heat generators; ordnance simulators.

Armor Lightweight bullet-proof garments.

PHYSICS

General Research on aerosols, air filtration, air sampling.

CONTACT: Dr. B. L. Harris
Chemical Systems Laboratory
Aberdeen Proving Ground, MD 21010
Telephone: (301) 671-2031
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DAVID W. TAYLOR NAVAL SHIP RESEARCH AND DEVELOPMENT CENTER
Bethesda, Maryland 20084

APPLICATION AREA

EXPERTISE

AERONAUTICS AND AERODYNAMICS

Aerodynamics Aerodynamic development and support for following aircraft: Vertical/Short Takeoff and Landing; Circulation Control Rotor; X-Wing; remotely Piloted; and Wing in Ground Effect.

Test Facilities and Equipment Subsonic and transonic wind tunnels and an anechoic flow facility.

BUILDING AND INDUSTRY TECHNOLOGY

Structural Analysis Computer and laboratory facilities for structural analysis of Naval ships.

Construction Materials, Components and Equipment Materials development research includes new alloys, plastics, elastomers, composites and coating.

COMPUTERS, CONTROL AND INFORMATION THEORY

Computer Software Computer services and techniques for management problems, naval design and construction, and many areas of mathematical analysis.

DETECTION AND COUNTERMEASURES

Acoustic Detection Acoustic silencing of submarines and surface ships including reduction of sonar self-noise and target strength.

ENERGY

Electric Power Transmission Engineering research to improve machinery and propulsion systems, and study of advanced electrical propulsion and power systems.

APPLICATION AREA

EXPERTISE

Engine Studies Research to improve shipboard machinery and propulsion systems.

Fuels Research in fuel development.

ENVIRONMENTAL POLLUTION AND CONTROL

Noise Pollution and Control Machinery Acoustic Analysis Test Center for noise reduction.

Solid Wastes Pollution and Control Research concerning abatement of air and water pollution from Navy ships.

Water Pollution and Control Research concerning abatement of water pollution from Navy ships.

INDUSTRIAL AND MECHANICAL ENGINEERING

Non-destructive Testing Non-destructive testing of fabricated structures.

MATERIALS SCIENCES

Composite Materials Materials development research including composites.

Iron and Iron Alloys Materials development research including iron alloys.

Lubricants and Hydraulic Fluids Materials development research including lubricants.

Materials Degradation and Fouling Materials development research including fouling problems

Nonferrous Metals and Alloys Materials development research including nonferrous metals and alloys.

APPLICATION AREA

EXPERTISE

OCEAN TECHNOLOGY AND ENGINEERING

Marine Engineering Research and Development Center for Naval Vehicles utilizing towing basins, test tanks, variable pressure water tunnels, circulating water channel, and other unique facilities.

TRANSPORTATION

Marine and Waterway Transportation Current concepts under research and development include hydrofoils, surface effect ships, air-cushion vehicles, small waterplane-area-twin-hull Ships and conventional Naval vehicles.

CONTACT:

Basil V. Nakonechny

Code 1102.1

David W. Taylor Naval Ship R&D Center

Bethesda, Maryland 20084

Telephone: (202) 227-1681

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
Research Triangle Park, North Carolina 27711

APPLICATION AREA

EXPERTISE

ATMOSPHERIC SCIENCES

Monitoring Evaluation of monitoring systems for pollutants in air, and sources of emissions. Conduct of field studies to characterize the nature and extent of air pollution. Development of quality assurance materials and procedures for air pollution measurement systems.

CHEMISTRY

Analytical Chemistry Instrumentation for qualitative and quantitative analysis of organic and inorganic constituents present in trace quantities in air, source samples, fuels, and raw materials. Instrumental techniques, including ICAP-optical emission spectrometry, gas chromatography, ion chromatography, spark source mass spectrometry, X-ray fluorescence, and neutron activation analysis.

ENERGY

Environmental Studies Long-term trend air monitoring to determine impact of control technology of power generators on air quality. Aerometric studies to determine effects on health. Short-term monitoring to characterize emissions from specific sources.

Fuels Analysis of fuels, including gasoline, diesel fuel, coal, and oil for trace constituents such as manganese, lead, phosphorus, and sulfur. Determination of physical parameters such as Reid vapor pressure, distillation range, octane number, and cetane number. Serving as the national source for standard reference materials for lead and manganese in gasoline.

APPLICATION AREA

EXPERTISE

ENVIRONMENTAL POLLUTION AND CONTROL

Air Pollution and Control

Evaluation and designation of reference methods for determining compliance to emission regulations. Fenceline monitoring to provide information on maximum population exposure for use in developing regulations. Exposure for use in developing regulations to air quality standards and assessment of control strategies.

HEALTH PLANNING

Community and Population Characteristics

Aerometric measurements to assess degree of exposure to air pollutants.

PROBLEM SOLVING INFORMATION FOR STATE AND LOCAL GOVERNMENT

Environment

Monitoring systems for measuring pollutants in air and source samples; measurements of impact of pollution on air quality and human exposure; quality control systems; and procedures for assuring data quality.

CONTACT:

Mr. Rudy Boksleitner
Environmental Research Center
Regional Services Staff
Research Triangle Park, NC 27711
Telephone: (919) 541-2611
Alternate: Mr. Gordon Ortman

ENVIRONMENTAL SCIENCES RESEARCH LABORATORY
Research Triangle Park, North Carolina 27711

APPLICATION AREA

EXPERTISE

AERONAUTICS AND AERODYNAMICS

- Aerodynamics Basic physical modeling of the dispersion of atmospheric pollutants; comparing and evaluating scaling laws and physical modeling techniques for use by other laboratories in the area of air pollution meteorology.
- Test Facilities and Equipment A water channel-towing tank, a meteorological wind tunnel, and an instrumented calibration wind tunnel are basic components. A mini-computer, including an analog-to-digital converter, magnetic disk and tape drives, electrostatic printer-plotter, and CRT display unit, is available for real-time data acquisition and analysis.

ATMOSPHERIC SCIENCES

- Aeronomy Determining the physical rate constants, chemical reaction mechanism, and pollutant transformations occurring in the stratosphere.
- Dynamic Meteorology Developing and evaluating air quality simulation models that describe the atmospheric link between pollutant emissions and ambient air quality.
- Meteorological Data Collection Analysis and Weather Forecasting Developing and updating air pollution potential climatologies.
- Physical Meteorology Identifying the chemical and physical transformations that emitted pollutants undergo in the atmosphere to form new gaseous or aerosol pollutants; developing models of the mechanisms and kinetics of pollutant transformations and removal processes in the atmosphere.

APPLICATION AREA

EXPERTISE

Weather Modification Assessing the effects of pollution on weather and climate, with consideration given to long-term trends in air quality.

CHEMISTRY

Analytical Chemistry Developing and conducting research in sampling methods, characterization, and measurement of air contaminants, with special emphasis on inorganic and toxic organic air pollutants.

Validating laboratory and prototype instrument models and developing suitable calibration techniques for measuring air pollutants.

Broad capability in detection, identification and analysis of atmospheric compounds, using a variety of modern techniques (i.e., gas chromatography, mass spectrometry, electron microscopy, atomic absorption, infrared, and Raman (laser) analysis.

Photo and Radiation Chemistry. Developing and applying electro-optical instruments and systems for the identification and measurement of pollutants emitted from stationary and mobile sources.

Physical and Theoretical Chemistry. Developing basic chemical kinetic data for use in mathematical modeling of chemically reactive atmospheric pollutant systems, using smog chambers and field measurement programs.

Determining the particulate size, mass, opacity, and chemical composition, as well as the chemical constituents of gaseous effluents, for ambient air pollutant and emissions measurement characterization.

APPLICATION AREA

EXPERTISE

ENERGY

Environmental Studies. Conducting laboratory and field studies to determine the origins, transport, transformation, and removal of pollutants released to the atmosphere from fossil fuel-burning energy production facilities.

CONTACT:

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FBI
(Mid-Atlantic Region)

FBI LABORATORY
Washington, D.C.

APPLICATION AREA

EXPERTISE

CHEMISTRY

Analytical Chemistry Chemical examinations of materials of evidentiary nature in criminal matters.

MATERIALS SCIENCES

Fibers and Textiles Microscopic comparisons/examinations of hairs/fibers/fabrics of evidentiary nature in criminal matters.

General Examinations/comparisons of general categories of materials of evidentiary nature in criminal matters such as soils, glass, metals, drugs, plastics, petroleum products, chemicals, dyes/inks, gun powder residues, bombs, blood/tissue, hairs, fibers, fabrics, toolmarks, tools, guns, ammunition, explosives, poisons, fuels, typewriting, handwriting, photographs, plaster casts.

MEDICINE AND BIOLOGY

Immunology Determination of origin of body fluids.

PROBLEM SOLVING INFORMATION FOR
STATE AND LOCAL GOVERNMENTS

Police Forensic science research and development.

URBAN AND REGIONAL TECHNOLOGY AND
DEVELOPMENT

Law Enforcement Specialized instruction/courses in forensic science for local law enforcement crime laboratory scientists.

CONTACT:

Dr. Eugene Rieder
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Department of Justice, FBI Laboratory
9th and Pennsylvania Avenue, N.W.
Washington, D.C. 20535
Telephone: (202) 324-4420
FIS: 324-4420

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USDA - FOREST SERVICE
Equipment Development Activity
Washington, D.C. 20013

APPLICATION AREA

EXPERTISE

AGRICULTURE AND FOOD

Agricultural Equipment
Facilities & Operations. Forestry applications of plows,
drills, planters, sprayers.

CIVIL ENGINEERING

Highway Engineering. New techniques in construction and
maintenance of low-volume roads,
bridges.

Civil Engineering. Low-volume road design, forest
environment flood control, watershed
control, sanitary engineering, dams.

Soil and Rock Mechanics. Highway construction materials,
soils, soil disturbance, avalanches,
landslides.

ENERGY

Energy Sources Wood, alternate sources in remote areas.

Energy Use, Supply and Demand. Conservation, alternative sources,
remote areas.

Fuel Conversion Processes. Wood-pyrolitic conversion to oil,
gas, char; wood for heat.

GOVERNMENT INVENTIONS FOR LICENSING

Mechanical Devices and
Equipment. Special equipment for forestry
applications, nurseries, harvesting,
rangelands, fire, planters, plows,
drills, etc.

NATURAL RESOURCES

Natural Resource Management. Special equipment and techniques
in wildland fire prevention and
operations.

APPLICATION AREA

EXPERTISE

Forestry	Equipment applications in timber management; recreation; rangeland improvements; reclamation; road and trail construction and maintenance; pesticide application.
Soil Sciences.	Equipment applications and techniques in land reclamation.
Cartography.	Development of new techniques in map making, photogrammetry; computerized applications.
Natural Resource Surveys	All applications of remote sensing in forestry and resource management.

CONTACT: Mr. Farnum M. Burbank
USDA - Forest Service
Equipment Development Activity
Engineering Staff
P. O. Box 2417
Washington, D.C. 20013
Tele: (703) 235-8114

FOREST SERVICES RESEARCH LABORATORIES
U.S. Department of Agriculture
Washington, D.C. 20013

APPLICATION AREA

EXPERTISE

ADMINISTRATION

Research Program Administration
and Technology Transfer. Technology transfer program.

ENERGY

Energy Use, Supply and
Demand Studies concerning use of wood.

ENVIRONMENTAL POLLUTION AND
CONTROL

Solid Wastes Pollution and
Control. Techniques on recycling of waste wood
products.

HEALTH PLANNING

Environmental and Occupational
Factors. Studies on value of trees to the
environment.

MATERIALS SCIENCES

Materials Degradation and
Fouling. Information on wood deterioration,
decay; prevention and control work.

MEDICINE AND BIOLOGY

Botany Information on tree anatomy, physiol-
ogy, and pathology.

Ecology. Information on trees in regard to
their environment.

NATURAL RESOURCES AND EARTH
SCIENCES

Mineral Industries Information on the reclamation of
strip-mined areas.

APPLICATION AREA

EXPERTISE

- Natural Resource Management. . . Information on the conservation and management of forested lands, grasslands, wildlife, water, and fire.
- Natural Resource Surveys Ongoing surveys of timberland.
- Forestry Information on all aspects of forestry.

URBAN AND REGIONAL TECHNOLOGY AND DEVELOPMENT

- Environmental Management and Planning Information on how vegetation can be utilized in improvement of urban environments.
- Housing. Information on proper insulation and also on housing renovations.

CONTACT: Harold G. Marx
Forest Service, Office of Deputy Chief,
Research, U. S. Dept. of Agriculture
14th & Independence Ave. Rm 3112
Washington, D. C. 20250
Telephone: (202) 447-7573

APPLICATION AREA

EXPERTISE

Personnel Detection. Acoustic and radar intrusion detectors, to prevent surreptitious entry.

General. Acoustic and radar intrusion detectors, to prevent surreptitious entry.

ELECTROTECHNOLOGY

Antennas. VHF, UHF, and microwave antenna design; small and low weight antenna systems, conformal antennas, stripline antenna.

Circuits. RF, AF, and digital microelectronics especially for severe environments and high g conditions.

Optoelectronics Devices and Systems. Surface acoustic wave devices, IR laser sources, modulators and measuring instruments, fiberoptic telemetry.

Power and Signal Transmission Devices. Miniature microwave power sources.

Resistive, Capacitive, and Inductive Components. Thin and thick film technology.

Semiconductor Devices. IC design, PIN diodes, microwave power sources.

General. Wide expertise in microwave radar systems, digital signal processing and telemetry.

ENERGY

Energy Conversion Storage. Special long shelf life, reserve instrument batteries; hand-cranked generators for emergency power.

Energy Use, Supply and Demand. Fluidic process temperature controllers to prevent over heating in high temperature processes.

APPLICATION AREA

EXPERTISE

ENVIRONMENTAL POLLUTION AND CONTROL

Air Pollution and Control. . . . Fluidic pollutant gas concentration sensors.

GOVERNMENT INVENTIONS FOR LICENSING

Electrotechnology. Electro-optical devices, ferroelectric devices.

Mechanical Devices and Equipment. Fluidic components, sensors, and systems.

Instruments. Fluidic gas concentration sensors.

HEALTH PLANNING

Health Care Technology. Federal Laboratory Consortium contract for biomedical technology.

INDUSTRIAL AND MECHANICAL ENGINEERING

Manufacturing Processes. Fabrication and packaging of rugged electronics.

Hydraulic and Pneumatic Equipment. Fluidic or fluoric sensors and controls of all types.

LIBRARY AND INFORMATION SCIENCE

Information Systems. Computerized information systems with on-line access to National Technical Information Service, Defense Documentation Center, and the Smithsonian Science Information Exchange.

MATERIALS SCIENCES

Adhesives and Sealants. Potting materials for rugged electronics.

APPLICATION AREA

EXPERTISE

Plastics Potting material, adhesives, dielectric materials.

MATHEMATICAL SCIENCES

Operations Research. Statistics, system modeling, cost-effectiveness analysis, system optimization, dynamic programming (especially geometric programming).

NUCLEAR SCIENCE AND TECHNOLOGY

Nuclear Explosion and Radiation Effects. Mechanisms of radiation damage to electronics materials; design and operation of nuclear radiation simulators; electromagnetic pulse protection.

Nuclear Instrumentation. Neutron and X-ray spectroscopy, ionizing radiation dosimetry.

PHYSICS

Fluid Mechanics. Theoretical analysis of confined flowfields, computer solutions of the Navier-Stokes equation, flow visualization.

Optics and Lasers. Coherent optical sources, near millimeter coherent sources, open resonator, cavities, heterodyne systems.

Solid State Physics. Theoretical and experimental expertise in the dynamics of charge carriers in amorphous insulators, electron spin resonance, Hall effect, nonlinear electron transport, acousto-optic effects, ferroelectric, LSI capabilities.

Plasma Physics Theoretical calculations of the dynamic response of plasmas, experimental expertise on MEV and positive ion beams, diagnostic measurements with X-ray bend crystal spectrometers.

APPLICATION AREA

EXPERTISE

Radio Frequency Waves Interactions of electromagnetic waves with matter.

General Quantum theory, quantum electrodynamics.

TRANSPORTATION

Air Transportation Crash recorders and crash research telemetry systems, clear air turbulence detection, jet engine control components.

Pipelining Transportation Flow measurements.

Road Transportation Crash recorders and crash research telemetry systems, anti-skid brake system, adaptive shock absorbers.

CONTACT: Mr. Clifford E. Lanham
Harry Diamond Laboratories
ATTN: DELHD-TT
2800 Powder Mill Road
Adelphi, MD 20783
Telephone: (202) 394-2296
Autovon: 290-2296

HEALTH EFFECTS RESEARCH LABORATORY
Research Triangle Park, North Carolina 27711

APPLICATION AREA

EXPERTISE

ADMINISTRATION

Research Program Administration
and Technology Transfer.

Research and development management, planning, and forecasting; contract management; in-house laboratories; consultation.

Program planning, development, execution and management; contract management.

BIOMEDICAL TECHNOLOGY AND HUMAN
FACTORS ENGINEERING

Biomedical Instrumentation
and Bioengineering

Non-invasive techniques and instrumentation for measuring human function under stress with environmental exposure.

Tissue Preservation and
Storage.

In collaboration with NBS and Federal Republic of Germany, studies to develop a tissue bank.

CHEMISTRY

Analytical Chemistry

Modern analytical instrumentation. Trace quantity analysis. Capacity for large number of samples. Emphasis on pesticides.

Broad capability in detection, identification, and analysis of compounds using a variety of modern techniques including gas chromatography, mass spectrometry, microanalysis, electron microscopy, and atomic absorption.

APPLICATION AREA

EXPERTISE

ENERGY

Environmental Studies Environmental aspects of power generation; impacts of shale technologies; effects of pollutants on physiological function.

ENVIRONMENTAL POLLUTION AND CONTROL

Environmental Health and Safety See Medicine and Biology.

MEDICINE AND BIOLOGY

Biochemistry Biological systems chemistry, assay, and analysis. Effects from environmental pollutants.

Clinical Chemistry Effects of pollutants on human volunteers.

Clinical Medicine Low levels of environmental pollutants on physiological functions in humans. Non-invasive techniques and stress employed.

Cytology, Genetics and Molecular Biology Bioassay systems; cytological alteration from energy production. Mutagenic and oncogenic studies.

Electrophysiology Neurophysiologic studies of environmental pollutants.

Immunology Experimental studies in animals and humans.

Psychophysiology Broad program in neurotoxicology of environmental toxicants; includes neurochemistry, neuropathology, neurophysiology, and behavioral toxicology.

Physiology Emphasis on pulmonary physiology in both humans and laboratory animals.

APPLICATION AREA

EXPERTISE

Radiobiology Effects of electromagnetic (particularly non-ionizing) radiation on biological systems.

Toxicology Studies of inhaled gases and particulates in animal systems.

NUCLEAR SCIENCE AND TECHNOLOGY

Radioactive Wastes and Radioactivity Studies on effects of Krypton⁸⁵.

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AIR FORCE HUMAN RESOURCES LABORATORY
Brooks AFB, Texas

APPLICATION AREA

EXPERTISE

ADMINISTRATION

Management Practice. Management and organizational behavior.

Research Program Administration and Technology Transfer. Research and development product utilization, technology transfer, contract management.

BEHAVIOR AND SOCIETY

Job Training and Career Development. Flying and technical training, job requirements, job classification, career progression, on-the-job training, and performance measurement (job evaluation).

Personnel Selection and Classification. Person-job matching, test development.

Psychology. Educational and industrial psychology, psychometrics, operations and cost analyses.

Social Concerns. Wide-spectrum utilization of women throughout USAF job specialities.

General. Man-vehicle interface, especially in flight simulation and maintenance simulation.

APPLICATION AREA

EXPERTISE

COMPUTERS, CONTROL AND INFORMATION
THEORY

Computer Software.

Modeling of manpower personnel system,
occupational and assignment analyses,
and development of computational
algorithms for the behavioral sciences.

CONTACT: COL. Ralph S. Hoggatt
Chief, Applications Office
Air Force Human Resources Laboratory
Brooks AFB, TX 78235
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A/V: 240-3426
Alternate: LT COL Tom O'Connor

INDUSTRIAL ENVIRONMENTAL RESEARCH LABORATORY
Research Triangle Park, North Carolina 27711

APPLICATION AREA

EXPERTISE

ADMINISTRATION

Research Program Administration and
Technology Transfer

R&D planning and management,
primarily contract management.

Technology transfer through
exhibition booth, symposia,
research reports, PR documents,
and packaging of R&D information.

ENERGY

Environmental Studies

Environmental assessment and
pollution controllability of
conventional combustion and
emerging energy systems.

Sampling and analysis methodology
for potentially toxic nonregulated
pollutants.

Electric Power Production

R&D on the management of power
plant waste and water.

R&D on cooling and waste heat
utilization.

Low nitrogen oxide burner design;
combustion modification research.

R&D on regenerable flue gas
desulfurization.

R&D on nonregenerable flue gas
desulfurization.

Fuel Conversion Processes

Chemically active fluid bed
(CAFB) R&D.

Environmental assessment studies
of synthetic fuels production
processes.

APPLICATION AREA

EXPERTISE

Fuels

R&D and environmental assessments of coal cleaning plants. Studies of cleaned coal applicability.

Environmental assessment and control R&D for refineries and petroleum distribution systems.

ENVIRONMENTAL POLLUTION AND CONTROL

Air Pollution and Control

Environmental assessments and control technology R&D for stationary sources. Sources covered include combustion; synthetic fuels, production; petrochemicals, textiles, refineries; iron and steel industry.

Solid Wastes Pollution and Control

Environmental assessment for multimedia pollution from stationary sources. Sources covered include: combustion; synthetic fuels production; petrochemicals, textiles, refineries; iron and steel industry.

R&D for disposal/utilization of wastes from combustion: refineries, iron and steel, and various pollution control devices/processes.

Water Pollution and Control

Environmental assessments for multimedia pollution from stationary sources. Sources covered include: Combustion; synthetic fuel production; petrochemicals, textiles, refineries; iron and steel industry.

R&D for pollution control from various stationary sources in the iron and steel industry; textiles, agrichemicals, petrochemicals. Research on treatability of wastewaters.

APPLICATION AREA

EXPERTISE

LIBRARY AND INFORMATION SCIENCE

Information Systems Retrieval of information and data on pollution control equipment, reliability, efficiency. Data on pollution sources, including emissions, effluents and controllability.

Management of extramural R&D program using automatic data processing.

PROBLEM SOLVING INFORMATION FOR STATE AND LOCAL GOVERNMENTS

Environment Information on pollution control technology for stationary sources: applicability, reliability, efficiency.

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APPLICATION AREA

EXPERTISE

- Optics and Lasers. Laser and holography techniques; nuclear-pumped laser technology; remote sensing.
- Solid State Physics. Material properties and processing of advanced solid state electronic devices and sensors.
- Structural Mechanics. Mechanisms of degradation and failure in structural materials; fracture mechanics.
- Plasma Physics. Experimental studies of flow field chemical kinetics using shock tubes, expansion tubes, etc.
- Radio Frequency Waves. Research on techniques for radiation, propagation or scattering of electromagnetic energy related to communications, radiometric applications -- VLF through millimeter wave frequencies.

PROBLEM SOLVING INFORMATION FOR STATE AND LOCAL GOVERNMENTS

- Energy. Energy audits; solar heating applications; infrared thermography.
- Environment. Atmospheric pollution measurements; water quality measurements.

TRANSPORTATION

- Air Transportation. Requirements for future aeronautical systems; conceptual designs; market demands; economic returns; technology impact; flight research.
- Transportation Safety. Aircraft airworthiness; develop airworthiness criteria; tests and simulator investigations; operating procedures.
- Global Navigation Systems. Advanced technology planning for large area space systems.

CONTACT: Mr. John Samos
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NASA
Hampton, VA 23655
Telephone (804) 827-3281

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APPLICATION AREA

EXPERTISE

Radiation Pollution and Control	Monitoring of gamma and X-rays, charged particles, neutrons; biological and environmental effects. Waste storage in granite; instrumentation.
Environmental Health and Safety	Effects of pollutants from power production on health; heavy metals effect on health; indoor air pollution; effects of radionuclides, ionizing radiation, magnetic and electric fields on health; population at risk to air pollution.
General	Survey of instruments for environmental monitoring.

GOVERNMENT INVENTIONS FOR LICENSING

Chemistry	Bioconversion, stack gas cleanup.
Nuclear Technology	Ion sources.
Biology and Medicine	Radiation cameras; radioactive tracer.
Metallurgy	New steel alloys and treatment, superconductors.
Instruments	Trace heavy metal detector.

HEALTH PLANNING

Community and Population Characteristics	Demographic information; epidemiology.
Environmental and Occupational Factors	Effects of energy production on health.
Health Care Technology	Development of an automated lipoprotein analyzer; radiation cameras and tomographic scanners; nuclear medicine, heavy ion radiation therapy.

APPLICATION AREA

EXPERTISE

INDUSTRIAL AND MECHANICAL ENGINEERING

- Environmental Engineering. Energy conserving lighting; passive light controls; solar air conditioning.
- Manufacturing Processes and Materials Handling. Powder metallurgy.

LIBRARY AND INFORMATION SERVICES

- Information Systems. Networks; management information systems; data base management; indexing; automatic indexing; computerized literature searching; current awareness information retrieval.
- Reference Materials. Thesauri; thesaurus software.

MATERIALS SCIENCES

- Carbon and Graphite. Glassy carbon; study of graphite surface chemistry in combustion.
- Ceramics, Refraction and Glass. Ceramic alloy research; microstructure relationship to properties; ferrites.
- Corrosion and Corrosion Inhibition. Erosion-corrosion resistant alloys in coal combustion systems; erosion-corrosion test facility.
- Iron and Iron Alloys. New high strength steels and heat treatment; steels for use at cryogenic temperatures; basic studies in powder metallurgy; nickel free cryogenic steels; study of fundamentals of alloy design, phase studies.
- Nonferrous Metals and Alloys. New magnetostrictive material; sintered printed circuit conductors; Nitinol research and applications.

APPLICATION AREA

EXPERTISE

Plasma Physics Research and development fusion energy.

General. Nuclear physics using high energy charged particle accelerators.

PROBLEM SOLVING INFORMATION FOR STATE AND LOCAL GOVERNMENT

Energy. Conservation, geothermal, solar; regional energy studies.

Environment. Compilation of descriptions of various commercial environmental monitoring instruments and data on various monitoring considerations; studies on effects of various pollutants.

General. Census data available; computer production of demographic maps.

TRANSPORTATION

Metropolitan Rail Transportation Investigation of control and safety related equipment for rail rapid transit systems.

URBAN AND REGIONAL TECHNOLOGY AND DEVELOPMENT

Economic Studies Various studies for California and Rocky Mountain region related to employment and economic impacts of various energy scenarios.

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FTS: 451-6502

NASA LEWIS RESEARCH CENTER
21000 Brookpark Road
Cleveland, Ohio 44135

APPLICATION AREA

EXPERTISE

ADMINISTRATION

Research Program Administration
and Technology
Transfer.

Management of R&D, small projects
to large complex systems. Compre-
hensive technology transfer program.

AERONAUTICS AND AERODYNAMICS

Aerodynamics. Aerodynamic behavior of bodies in
large wind tunnels and in zero gravity.

Test Facilities and
Equipment

Design and operation of vacuum, cryo-
genic, materials, engine, and power
test facilities. Large wind tunnels
and zero gravity facilities. Data
collection systems.

BIOMEDICAL TECHNOLOGY AND
HUMAN FACTORS ENGINEERING

Prosthetics and
Mechanical Organs

Advanced materials for prosthetic
applications. Surface treatment of
prosthetics materials with ion beams
to promote tissue and bone adherence.

BUSINESS AND ECONOMICS

Minority Enterprises. Scientific and technical careers.
Minority R&D enterprises.

CHEMISTRY

Analytical Chemistry. Instrumental analysis including mass
spectroscopy, optical and x-ray
emission spectroscopy, x-ray diffraction,
atomic absorption, spectrophotometry,
and gas, ion, and liquid chromatography.
Metallographic analysis (wet chemistry).

APPLICATION AREA

EXPERTISE

Basic and Synthetic
Chemistry

Synthesis, properties, and reactions
of inorganic and organic compounds.

Industrial Chemistry and
Chemical Process
Engineering

Transportation, handling, and
storage of cryogenic fluids.

Photo and Radiation
Chemistry

Studies involving the interrelation-
ships of electromagnetic or particle
radiation and chemical reactions.
Studies of radioactive elements and
their reactions such as radio
pharmaceuticals. Photovoltaic de-
vices (solar cells).

Physical and Theoretical
Chemistry

Physical aspects and interpretation
of chemical systems; reaction kinetics,
chemical equilibria, chemical thermo-
dynamics, thermochemistry, etc. Elec-
trochemistry. Phase studies of metal-
lic systems. Membranes. Surface
chemistry.

Polymer Chemistry.

Theory and chemistry of polymerization,
curing, crosslinking, etc. Synthesis,
properties, and reactions.

COMMUNICATION

Common Carrier and
Satellite

High power, high frequency amplifiers
for communications satellites. Ad-
vanced satellite communications sys-
tems.

COMPUTERS, CONTROL AND INFORMATION THEORY

Control Systems and
Control Theory.

Open and closed loop control systems.

Information Processing
Standards

Data acquisition and reduction for
test installations.

APPLICATION AREA

EXPERTISE

ELECTROTECHNOLOGY

Antennas.	Antenna theory and design, wide-band and narrow-band, for satellite and spacecraft communications systems.
Circuits.	Circuit theory, filters, amplifiers, power conditioning and supply circuits, signal conditioning circuits, commutators, logic circuits, switching circuits, phase locked loop circuits.
Electromechanical Devices	Relays, switches.
Electron Tubes.	Traveling wave tubes, Klystron tubes, thyristor tubes.
Power and Signal Transmission Devices.	Satellite and spacecraft communications terminals, wideband parametric amplifiers, analog and digital transmission devices, lasers, data relay systems.
Resistive, Capacitive and Inductive Components.	Capacitors, electromagnets.
Semiconductor devices	Transistors, semiconductor diodes.

ENERGY

Batteries and Components.	High energy-density battery research, nickel-zinc and silver-zinc batteries, for space and terrestrial applications.
Electric Power Production	Gas turbines, topping cycles, magneto-hydrodynamic generation, combustion processes, solar photovoltaic, large wind power systems.
Energy Sources.	Solar (photovoltaic), wind (large systems).

APPLICATION AREA

EXPERTISE

Miscellaneous Energy
Conversion and
Storage

Gas turbine and compressors, topping cycles, Rankine, Brayton, and Stirling cycle engine systems, magnetohydrodynamic generation; solar photovoltaic; large wind power systems; high energy density batteries; fuel cells; reduction-oxidation (redox) storage systems.

Fuel Conversion Process

Basic studies on heat transfer theory, principles and mechanisms. Advanced coal-fueled systems studies, once-through boiling, heat pipes, combustion process.

Polymer Chemistry

Theory and chemistry of polymerization, curing, crosslinking, etc. Synthesis, properties, and reactions.

General

Basic studies on heat transfer theory, principles, and mechanisms. Once-through boiling. Transpiration cooling. Magnetic heat pumping.

ENVIRONMENTAL POLLUTION AND CONTROL

Air Pollution and Control

Airborne air quality and atmospheric condition monitoring systems. Some development and demonstration of advanced ground-based air quality monitoring techniques.

Noise Pollution and Control

Research on propagation and reduction of aircraft engine noise.

Radiation Pollution and
Control

Radioactive contamination assessment and control.

Environmental Health and
Safety

Environmental contamination assessment and control.

APPLICATION AREA

EXPERTISE

GOVERNMENT INVENTIONS FOR LICENSING

General Various, particularly as related to aircraft and spacecraft propulsion and electric power, satellite communications, and materials.

INDUSTRIAL AND MECHANICAL ENGINEERING

Quality Control and Reliability Standards, plans, and techniques for insuring high quality and reliability. Failure analysis and information feedback.

Tooling, Machinery and Tools Gas turbines, compressors, pumps, gears, bearings, seals, pressure vessels, advanced materials. Lubrication, friction, and wear.

Manufacturing Processes and Materials Handling Advanced materials application and fabrication. Handling and storage of cryogenic fluids, hydrogen, fuel and oxidizers. Sputtering and ion plating.

Nondestructive Testing Ultrasonic, radiographic, and other means for nondestructive evaluation. Electronic and optical systems for internal inspection of operating machinery.

MATERIALS SCIENCES

Ceramics, Refractories and Glass Basic studies of ceramic materials for very high temperature applications.

Composite Materials Comprehensive research and development on essentially all classes of composite materials, their properties, characteristics, and applications.

APPLICATION AREA

EXPERTISE

Corrosion and Corrosion Inhibition.

Research on high temperature environment corrosion and corrosion inhibiting coatings, high temperature oxidation and oxidation resistant coatings.

Iron and Iron Alloys.

Basic studies of physical properties to extend uses at cryogenic temperature.

Lubricants and Hydraulic Fluids.

Research and development of advanced lubricants and hydraulic fluids for severe operating conditions and long life.

Nondestructive Testing.

Nonferrous Metals and Alloys.

Research and development for high temperature and gas turbine applications. Superalloys. Dispersion strengthened materials. Eutectics.

Plastics.

(see Polymer Chemistry)

Refractory Metals and Alloys.

Research on microstructure, physical and mechanical properties, alloying for high temperature use, Improvement in fabrication properties and processes.

MEDICINE AND BIOLOGY

Radiobiology.

Preparation of experimental radioactive isotopes for diagnosis and treatment of diseases for U.S. Public Health Service.

NATURAL RESOURCES

Natural Resource Surveys.

Airborne multispectral scanning to determine earth surface conditions.

APPLICATION AREA

Snow, Ice, and

Permafrost.

EXPERTISE

Aircraft and satellite-borne sensor systems to determine the thickness and kinds of ice covering large bodies of water.

PHOTOGRAPHY AND RECORDING DEVICES

Photographic Techniques and Equipment

Development of high-speed motion picture systems and other techniques for photographing research work.

PHYSICS

Acoustics

Research on the nature, properties, propagation, and suppression of sound in ducts. Applications to aircraft engines.

Fluid Mechanics

Research and applications of fluid properties, and static and dynamic behavior; and of interactions between fluids and solid bodies.

Optics and Lasers

Development of optical devices for instrumentation and data taking purposes.

Solid State Physics

Research on physical properties of materials particularly as related to magnetism and superconductivity. Semiconductor studies particularly as related to photovoltaic devices.

Structural Mechanics

Stress analysis, shock and vibration research, particularly as related to properties of advanced materials and rotating machinery. Fracture mechanics. Fatigue failure mechanisms.

Plasma Physics

High temperature plasma research for advanced power and propulsion systems.

APPLICATION AREA

EXPERTISE

PROBLEM SOLVING INFORMATION
FOR STATE AND LOCAL
GOVERNMENTS

Energy. Alternative energy conversion processes: stand-alone solar photovoltaic systems, large central wind power systems, co-generation, advanced coal-burning systems, energy storage systems, airborne thermal imaging for heat loss.

Environment. Techniques for identifying airborne contaminants and locating their sources.

TRANSPORTATION

Surface Transportation. Electric vehicle studies and power plant development. Automotive gas turbine and Stirling-cycle engines. Technology for increasing fuel efficiency and reducing exhaust emissions.

CONTACT: Paul Foster
Technology Utilization Officer
Mail Stop: 3-19
NASA Lewis Research Center
21000 Brookpark Road
Cleveland, Ohio 44135
Telephone: (216) 433-4000, ext 422

APPLICATION AREA

EXPERTISE

INDUSTRIAL AND MECHANICAL ENGINEERING

Metric conversion planning, precision machining and polishing; non-destructive testing of microtargets for laser fusion; acoustic emission for nondestructive testing applications.

LIBRARY AND INFORMATION SERVICES

Novel techniques for information storage and rapid retrieval systems; master control computer program; on-line literature searching; computer program for integrating tests and data.

MATERIALS SCIENCES

Development of metals and alloys having special properties; fabrication of specialized ceramic components; synthesis, formulation and characterization of polymers and fiber composites; synthesis, formulation, processing, machining; processing and fabrication of beryllium glasses; storage behavior of hydrogen and its isotopes under extremes of pressure and temperature and solid state chemistry; new materials and fabrication processed by vapor deposition techniques; coatings, structures and electronic devices by thin-film technology; electroplating and electroforming of shapes and materials; crystal growth of large silicon and germanium crystals; joining technology; physical and mechanical testing at the extremes of temperature and pressure; surface microstructure analysis; equation-of-state studies; radiation effects on structural materials; fabrication of amorphous alloy glass components.

MATHEMATICAL SCIENCES

Sensitivity analysis of ordinary differential equation systems subroutines to evaluate mathematical functions; applied and computational mathematics; computer algorithms for transposing large matrices.

APPLICATION AREA

EXPERTISE

MEDICINE AND BIOLOGY

Screening of chemotherapeutic agents using pattern recognition techniques; biological effects of nuclear explosions.

NATURAL RESOURCES AND EARTH SCIENCES

Seismic analysis of resistant structures and power reactors; seismic detection and instrumentation; in situ coal gasification; shale oil retorting.

NUCLEAR SCIENCE AND TECHNOLOGY

Energy level computations and measurements; nuclear electric moments; gigajoule laser technology; management of nuclear wastes.

PHOTOGRAPHY

Optics of ultra-high-speed photography; picosecond photography of laser produced plasmas; ultrafast optical/X-ray framing camera; high voltage photography; industrial photography.

PHYSICS

Computations; geophysical investigations of terrestrial material properties; geophysical instrumentation and measurements.

PROBLEM SOLVING INFORMATION FOR STATE AND LOCAL GOVERNMENTS

Fire-arson and disaster control planning; fire hydraulic; residential and industrial fire protection studies; fire protection equipment development - streams, nozzles, hydrants, hydraulic hardware; State and local government assistance in energy planning and analysis; technology transfer to State and local governments; transportation modeling of street and highway systems.

CONTACT:

Mr. Charles F. Miller
Lawrence Livermore Laboratory
University of California
P.O. Box 808 - L216
Livermore, California 94550
Telephone: (415) 422-6902
FIS: 532-6902

USDA - FOREST SERVICE
Equipment Development Center
Missoula, MT 59801

APPLICATION AREA

EXPERTISE

AERONAUTICS AND AERODYNAMICS

Parachutes & Decelerators

Smoke-jumpers parachutes, smoke-jumper clothing and equipment, paracargo equipment and techniques.

AGRICULTURE AND FOOD

Agricultural Equipment, Facilities, and Operations.

Plows, drills, spreaders

BIOMEDICAL TECHNOLOGY AND ENGINEERING

Human Factors Engineering

Hand tools, firefighters protective clothing, stresses in forest workers and fire fighters.

ENVIRONMENTAL POLLUTION AND CONTROL

Pesticides Pollution and Control.

Pesticide application and deposit assessment in forest environment.

GOVERNMENT INVENTIONS FOR LICENSING

Mechanical Devices and Equipment.

Electronic counters, special forestry equipment, nursery equipment.

MATERIALS SCIENCES

Fibers and Textiles

Firefighters protective clothing, chainsaw chaps.

APPLICATION AREA

EXPERTISE

MEDICINE AND BIOLOGY

Pest Control. Aerial application equipment for forest environments, spray assessment, aircraft spray characterization.

NATURAL RESOURCES

Forestry. Greenhouse and nursery equipment, fire equipment, small cable harvesting systems, trail construction and maintenance equipment, site preparation, cone and seed harvesting, watershed instrumentation, safety equipment and procedures.

Natural Resource Management. Fire equipment - hand tools, protective clothing, personal gear, food.

Soil Sciences. Land reclamation equipment - plows, drills, planters.

TRANSPORTATION

Transportation Safety. Sign materials, construction, maintenance

CONTACT: Mr. Lee J. Northcutt
USDA-Forest Service
Equipment Development Center
Fort Missoula
Missoula, MT 59801

APPLICATION AREA

EXPERTISE

Photographic Techniques and Equipment.

Development test and evaluation of airborne camera systems including long focal length optics, auto and range focusing systems, data annotation systems, panoramic and line scan system. Development of automated camera test equipment. Evaluation of silver halide and unconventional photographic technology.

Recording Devices.

Development of acoustic and video recording devices. Aerial photography. Development of laser records.

General.

Photo image enhancement techniques.

PHYSICS

Acoustics.

Design and development of underwater acoustic systems. Ocean parameters as applied to acoustic sensors.

Fluid Mechanics.

Three-dimensioned, compressible, unsteady aerodynamics for Structural Airloads and Flutter analysis - Potential flow, Mach Box, Doublet Lattice and Piston Theory. As applied to proper operation of systems being developed. Aircraft fluidic components and systems.

Optics and Lasers.

Ring Laser Gyro Development. Development of metal vapor lasers.

Structural Mechanics

A/C Stress Analysis, Finite Element Methods, NASTRAN/Stags, Dynamic, Aero-Thermo-Servo-Plastic Analysis, Viscoelasticity, Vibration, Impact and Shock wave analysis. Buckling, fatigue and fracture mechanics.

Plasma Physics

Nuclear Magnetic Resonance Gyro Development.

APPLICATION AREA

EXPERTISE

PROBLEM SOLVING INFORMATION FOR
STATE AND LOCAL GOVERNMENTS

Human Resources. Application of human factors
training research and techniques
to improve personnel training,
assessment of training effectiveness.

TRANSPORTATION

Global Navigation Systems. Design and Development of all systems.

CONTACT: Mr. Jerome Bortman
Code 7012
Naval Air Development Center
Warminster, Pennsylvania 18974
Telephone: (215) 441-3100
A/V: 441-3100

APPLICATION AREA

EXPERTISE

NONDESTRUCTIVE TESTING

- Ultrasonic Testing Subsurface flaw detection, thickness measurement and the characterization of metallurgical or material properties of structures or materials by interrogation with energy in the form of sound waves.
- Radiographic Testing The use of radiant energy in the form of neutrons, X-rays or gamma rays for subsurface examination of opaque objects by producing graphical records or sensitized film.
- Miscellaneous Testing. Detection of surface or slightly subsurface flaws. Includes liquid penetrant, magnetic-particle, eddycurrent, etc.

CONTACT:

Mr. Michael Palamar
Code 9011
Naval Air Engineering Center
Lakehurst, New Jersey 08733
Telephone: (201) 323-2391
Autovon: 624-2391

NAVAL COASTAL SYSTEMS LABORATORY
Panama City, Florida 32401

APPLICATION AREA

EXPERTISE

ADMINISTRATION

Management Information Systems Local planning and tracking.
Research Program Administration and Technology Transfer Resource data base development.

BIOMEDICAL TECHNOLOGY AND HUMAN FACTORS ENGINEERING

Biomedical Instrumentation and Bioengineering Diver monitoring.
Life Support Systems Underwater breathing, diver heating.

DETECTION AND COUNTERMEASURES

Acoustic Detection Hi-definition savor; mine hunting; underwater small detection.
Electromagnetic & Acoustic Countermeasures Mine countermeasures; acoustic and torpedo countermeasures.
Magnetic Detection Cryogenic magnetometers; magnetic signal processing.
Personnel Detection Underwater swimmer detections.
Seismic Detection Hostile weapon location.

ELECTROTECHNOLOGY

Electromechanical Devices Underwater transducer; controlled acoustic noisemakers.

ENVIRONMENTAL POLLUTION AND CONTROL

Solid Wastes Pollution and Control Ultrasonic sterilization.

APPLICATION AREA

EXPERTISE

Water Pollution and
Control. Ship waste water control.

MATHEMATICAL SCIENCES

Operations Research. Navy missions and systems remine,
acoustic, torpedo countermeasures,
diving, special and amphibious warfare.

MEDICINE AND BIOLOGY

Physiology Diver physiology.

NAVIGATION, GUIDANCE, AND CONTROL

Navigation Systems Small area navigation.

TRANSPORTATION

Marine and Waterway
Transportation Swimmer delivery vehicles; advanced
craft T&E.

CONTACT:

Mr. William H. Williams, Code 750
Naval Coastal Systems Laboratory
Panama City, Florida 32407
Telephone: (904) 234-4113
Autovon: 436-4113

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH
Cincinnati, Ohio 45226

APPLICATION AREA

EXPERTISE

BEHAVIOR AND SOCIETY

Social Concerns. Conducts research on occupational stress and on the behavioral aspects of occupational safety and health.

CHEMISTRY

Analytical Chemistry Develops analytical methods for chemical agents found in occupational exposures.

HEALTH PLANNING

Environmental and Occupational Factors Recognition, evaluation, and control of occupational safety and health hazards; development of criteria for workplace safety and health standards; operates a Clearinghouse for Occupational Safety and Health Info.; annually publishes a Registry of Toxic Effects of Chemical Substances.

INDUSTRIAL AND MECHANICAL ENGINEERING

Industrial Safety Engineering. Conducts safety research; develops control measures and devices for application to industrial and other work sites; certifies respiratory protection equipment, detector tubes, coal mine dust personal sampler units, and sound level meters.

General. Conducts research on industrial process modifications and design; modification, and maintenance of industrial equipment; develops control technology for health and safety hazards in industrial and other work-places.

APPLICATION AREA

EXPERTISE

MEDICINE AND BIOLOGY

General.

Conducts occupational safety and health research including toxicology; occupational carcinogens; epidemiology of occupational diseases, respiratory diseases, ergonomics, stress physiology, and behavioral factors; develops recommended programs for delivery of occupational safety and health services.

CONTACT: Mr. T. F. Schoenborn
National Institute for Occupational
Safety and Health
Robert A. Taft Laboratories
4676 Columbia Parkway
Cincinnati, OH 45226
Telephone: (513)-864-8326
FTS: 684-8326

NOO
(Southeast Region)

U.S. NAVAL OCEANOGRAPHIC OFFICE
Bay St. Louis, MS 39522

APPLICATION AREA

EXPERTISE

OCEAN TECHNOLOGY AND
ENGINEERING

Marine Geophysics and
Geology

Oceanographic Vessels
Instruments and
Platforms

Hydrography

CONTACT: Mr. Clayton D. Griffith
Code 3030
U.S. Naval Oceanographic Office
NSTL Station
Bay St. Louis, MS 39522
Telephone: (601) 688-4368
Autovon: 488-4369

11-24183

APPLICATION AREA

Structural Mechanics

EXPERTISE

Dynamics and statics of solid bodies, hollow shells and spheres. Kinetics, kinematics, shock and vibration, stress analysis and hydrodynamics.

PROBLEM SOLVING INFORMATION FOR STATE AND LOCAL GOVERNMENTS

Energy

Energy from marine biomass. Solar energy.

Environment

Marine environment. Urban noise and industrial noise.

Police and Fire

Propagation studies for fire department communications, speech scramblers, electronic devices for surveillance.

TRANSPORTATION

Global Navigation Systems

Developer of Omega worldwide navigation system.

URBAN AND REGIONAL TECHNOLOGY AND DEVELOPMENT

Environmental Management and Planning

Marine pollution and urban noise abatement and control.

CONTACT: Mr. Donald H. Courter
Naval Ocean Systems Center
San Diego, California 92152
Telephone: (714) 225-7455
Autovon: 933-7455

NAVY PERSONNEL RESEARCH AND DEVELOPMENT CENTER
San Diego, California 92152

APPLICATION AREA

EXPERTISE

ADMINISTRATION

Management Information	Computer-based management information system.
Management Practice	Coordination of research and development efforts. Measurement of job performance.
Personnel Management, Labor Relations and Manpower Studies	Techniques for forecasting and costing of labor supply.
Research Program Administration and Technology Transfer	Coordination of research and development efforts. R&D applications program, Technology Transfer program.

BEHAVIOR AND SOCIETY

Job Training and Career Development	Techniques and aids for enhancing performance. Development of training technology. Test and application of training systems. Research on acquisition of basic skills, and on information and decision processing. Selection using aptitude and vocational interest tests. Prediction of attrition.
Psychology	Attitude and motivation research. Applied psychobiology. Cross-cultural research.
Social Concerns	Research on social issues, including race relations, women in non-traditional careers, drugs, and alcoholism.

APPLICATION AREA

EXPERTISE

BIOMEDICAL TECHNOLOGY AND HUMAN FACTORS ENGINEERING

Human Factors Engineering.

Human factors evaluations of new and more automated systems.

COMPUTERS, CONTROL AND INFORMATION THEORY

Computer Software.

Design and development of computer programs for data processing and statistical analysis.

HEALTH PLANNING

Environmental and Occupational Factors.

Effects of shipboard environmental factors on job performance.

LIBRARY AND INFORMATION THEORY

General.

Collection of books and journals in the social sciences. Lockheed Dialog system abstract search facilities.

MATHEMATICAL SCIENCES

Operations Research.

Analysis of management systems.

Statistical Analysis.

Discriminant, factor, variance, and regression analysis. Nonparametric statistics, statistical decision theory, distributions and inference.

CONTACT: Mr. Allean A. Sjöholm
Science Advisor
Navy Personnel Research and
Development Center
Code 201
San Diego, California 92151
Telephone: (714) 236-6003

11-254 '86

APPLICATION AREA

General.

EXPERTISE

Resonance in magnetic materials, spin-ordered magnetic phenomena, rare earth - transition metal magnetic materials, magnetic properties of amorphous materials. X-ray spectrochemical analysis, X-ray diffraction, band structure and superconductivity, plasma diagnostics. Phase transformations, crystalline defect states, microstructural effects in superconductors, elasticity, plasticity, mechanical phenomena. Radiation effects on infrared detectors, optical and electronic materials, and satellite components, solar cells, radiation belts, hardening satellite components against laser beams, radiation vulnerability, radiation curing of polymers, 2-MV-electron Van de Graaff, cobalt-60 source. Measurements on targets bombarded by MeV electron beams, deposition of energy by charged particles, high-intensity laser beam propagation, neutron transport, coherent beamstrahlung propagation, neutron reactions in tissue resident elements. Materials analysis by means of charged particle beams, implantation of ions into solids energy charged particle beams, radiation effects caused by high energy charged particle beams, radiation damage in reactor materials, crystal studies by means of particle channeling techniques, ion-induced X-rays, modification of surface and subsurface properties by ion-implantation, 5 MV Van de Graaff. Preparation and development of magnetic dielectric, optic, and semiconductor materials, optical components and coatings, glass blowing, and microwave tube assembly. Surface and interface physics, cathode research and development, characterization of and growth of semiconductor, metal, and insulator films and surfaces, bonding and adhesion studies, thermionic energy

APPLICATION AREA

EXPERTISE

Physics

conversion. Surface acoustic waves, microwave and millimeter wave integrated circuits, surface magnetostatic waves, microwave solid state sources, microwave ferromagnetic components, millimeter wave device research.

Ion implantation technology, high and low power devices for energy conversion, field effect transistor/reliability and failure analysis, MIS failure physics; radiation vulnerability and hardening, high frequency microwave devices.

MEDICINE AND BIOLOGY

Radiobiology

Radiations for biological and medical purposes, neutron beams for cancer therapy, radioisotope production, ion-induced X rays, 75 MeV cyclotron.

ELECTROTECHNOLOGY

General.

Silicon device processing, micro-electric fabrications, integrated circuit technology.

Semiconductor Devices.

Solid state theory, electrical and optical characterization of materials, impurity and defect studies, structural and electronic properties of amorphous semiconductors, optical magneto-optical studies of surface and interfaces.

CONTACTS:

Mr. Emanuel Brancato
Naval Research Laboratory
Code 4104

Washington, D.C. 20375
Telephone: (202) 767-3046

Mr. Richard Fulper, Jr.
Code 1434

Washington, D.C. 20375
Telephone: (207) 767-3744

A/V: 767-3744

APPLICATION AREA

EXPERTISE

PHYSICS

- Acoustics. Anechoic coatings (theoretical and experimental studies); scattering of sound by viscoelastic structures; modulus of elasticity; dispersion of sound; nonlinear acoustics.
- Fluid Mechanics. Boundary layer transition; turbulent boundary layers; vortex fields; compressibility of viscous fluids; projectile motion; water-entry problems.
- Optics and Lasers. Far infrared laser design; adaptive optics; laser radars.
- Solid State Physics. Electrooptical, magneto-optical, and transport properties of narrow band-gap semiconductors. High field transport phenomena and magneto-phonon resonance in III-V compounds. Magneto-elastic effects in rare earth/iron compounds. Domain wall dynamics in thin magnetic films. Radiation damage in semiconductors. Transport phenomena in rare earth doped IV-VI alloys.
- Plasma Physics Propagation of electron beams. Interaction of high intensity charged particle beams with matter. Plasmas produced by high intensity X-ray sources.
- Radiofrequency waves Dielectric millimeter wave transmission lines. High power radiofrequency generators.
- General Physics. Properties of dielectrics. Magnetic properties of rare earth/iron compounds. Ion implantation depth profiles. Surface analysis (elemental composition of surfaces). Statistical physics. Electronic noise. Physics of high pressure. Non-equilibrium statistical mechanics. Equations of state at high pressure. Cohesive energy calculations. Statistical theory of liquids and solids. Fracture Mechanics.

APPLICATION AREA

EXPERTISE

PROBLEM SOLVING INFORMATION FOR STATE AND LOCAL GOVERNMENTS

Police, Fire, and Emergency
Services

Night vision device evaluation. Small, low-power, programmable electronic timer for covert switch actuation. Graphical slide rule to estimate downwind hazard from accidental chemical discharges.

Environment

Ordinance pollution abatement; methods to eliminate waste propellant, explosive, and pyrotechnic materials and to monitor these materials in the environment. Noise abatement and control. Design and fabrication of mobile wet scrubber and mobile effectiveness of each type on various sources of fine particulates.

TRANSPORTATION

Transportation Safety

Developing system to reduce incidence of derailment (wheel-bearing temperature and vibration sensors with automatic air-brake actuator). Developed standards for packaging hazardous materials. Mobile unit for rapid measurement of highway surface texture.

URBAN AND REGIONAL TECHNOLOGY AND DEVELOPMENT

Transportation and Traffic
Planning

Self-powered vehicle detector for traffic counting and control.

CONTACT:

Robert M. Barash
Naval Surface Weapons Center
Code 021
White Oak, Silver Spring,
Maryland 20910
Telephone: (202) 394-3038
Autovon: 290-3038

NAVAL UNDERWATER SYSTEMS CENTER
New London, Connecticut 06320

APPLICATION AREA

EXPERTISE

ADMINISTRATION

Inventory Control.	Inventory control systems, minor property, instrumentation, plant account.
Management Practice.	Procurement management systems, cost analysis, management analysis, effectiveness evaluation of laboratory performance.
Management Information.	Zero base budgeting, equipment management.
Personnel Management, Labor Relations, and Manpower Studies.	Personnel evaluation, resource and workload analysis, project management training source.
Research Program Administration and Technology Transfer.	R&D planning and management, identification of technical problem areas and research needs, technology transfer program.
Computer Application.	Data base systems for management, PERT.

AGRICULTURE AND FOOD

Fisheries and Aquaculture.	Instrumentation.
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BEHAVIOR AND SOCIETY

Psychology.	Environmental reaction and personnel interactions, job satisfaction, human behavior, adjustment, attitudes, intelligence, judgment, leadership and motivation, personality studies.
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APPLICATION AREA

EXPERTISE

BIOMEDICAL TECHNOLOGY AND HUMAN FACTORS ENGINEERING

Biomedical Instrumentation and Bioengineering

Extensive sensors and signal processing displays and specialized instrumentation capabilities, ultrasonic theory and transducer design.

Human Factors Engineering.

Display systems, format evaluation, capacity for studies and equipment review to meet human engineering standards.

COMMUNICATION

Common Carrier and Satellite.

Satellite systems used for communication navigation and data links for oceanographic programs.

Graphics.

Extensive graphic display capability for use in data analysis as well as system configuration experiments.

Communication and Information Theory

Submarine radio and acoustic communication systems.

COMPUTERS, CONTROL AND INFORMATION THEORY

Computer Hardware.

Extensive use of all types of computers and computer systems for instrumentation as well as military systems.

Computer Software.

Computer programming, programming languages, large-scale systems of computer applications.

DETECTION AND COUNTERMEASURES

Acoustic Detection

Major portion of the Center's mission related to sonar system development and acoustic data collection.

APPLICATION AREA

EXPERTISE

Structural Mechanics

Finite element analysis of complex structures.

Radio Frequency Waves.

Propagation studies.

PROBLEM SOLVING INFORMATION FOR STATE AND LOCAL GOVERNMENTS

Energy

Solar energy, energy conservation.

Environment.

Preservation of near-shore environment, oil on water sensors.

Police, Fire, and Emergency
Services

Asset management system, records management system, fuel dispensing system, emergency communications, speech scramblers.

Transportation.

Life cycle costing, self cancelling ticket, traffic management guide.

General.

Intergovernmental Personnel Act Assignments to assist state and local executive and legislative agencies.

/ Employee Technical Volunteer Services.

Computer conferencing; use of TV in municipal government.

CONTACT: Mr. Michael Ahrens
Naval Underwater Systems Center
Code 0702, Bldg. 80T
New London, Connecticut 06320
Telephone: (203) 447-4908
A/V: 636-4908

NIGHT VISION & ELECTRO-OPTICS LABORATORIES
Fort Belvoir, Virginia 22060

APPLICATION AREA

EXPERTISE

COMPUTERS, CONTROL AND INFORMATION
THEORY

Image Processing Image enhancement techniques, target
cueing, infrared target/background
data base library.

DETECTION AND COUNTERMEASURES

Infrared Detection Ground devices for individual use or
vehicle use; airborne systems for
mapping or aviator maintenance.

Optical Detection Searchlights visible use or as aid to
night vision devices.

Personnel Detection Detection of personnel by use of
image intensifier or infrared devices.

ELECTROTECHNOLOGY

Optoelectronic Devices Visual, infrared.

Semiconductor Devices Integrated circuits.

MATERIALS SCIENCES

Ceramics, Refractories, and
Glass Fiber optics, micro channels, glass
substrates.

Coatings, colorants and
Finishes Optical equipment.

PHOTOGRAPHY AND RECORDING DEVICES

Photographic Techniques and
Equipment Capability to record target signatures/
radiometric data recording.

Recording Devices Night vision field and laboratory
devices for visual and infrared
systems.

APPLICATION AREA

EXPERTISE

PHYSICS

Optics and Lasers.	Theory, Design of optical equipment, optical test equipment for visual through infrared spectrums.
Solid State Physics.	Electro-optical materials (receivers/detectors, emitters).

PROBLEM SOLVING INFORMATION FOR STATE AND LOCAL GOVERNMENTS

Police, Fire and Emergency Services	Night vision devices.
Environment.	Detection of pollution.

URBAN AND REGIONAL TECHNOLOGY DEVELOPMENT

Fire Services, Law Enforcement and Criminal Justice	Night vision devices.
General.	Any need or application to enhance the vision process thru electro-optics.

CONTACT:
Richard W. Fulton
USA Night Vision Laboratory
ATTENTION: DELNV-D
Fort Belvoir, Virginia 22060
Telephone: (703) 664-3923
Autovon: 354-3923

APPLICATION AREA

EXPERTISE

General. Development and production; reliability; support; quality assurance system safety; missile propulsion (rockets, ramjets and turbojets).

PHOTOGRAPHY AND RECORDING DEVICES

Holography. Holographic structural analysis.

PHYSICS

Acoustics. Acoustical sensor applications.

Optics and Lasers. Waveguide laser technology and applications; range measuring devices; synthesis, analysis and fabrication of low loss multilayer thin film optical coatings.

Solid State Physics. Solid state circuitry and electro-mechanical components; piezoelectric materials growth.

Structural Mechanics. Missile structure design and analysis, aeromechanics and aerodynamics of missiles using LED and laser diodes.

Radio Frequency Waves. RF device technology development; sea surface RF scatter modeling.

General. Computations and analysis as applies to propulsion propellants and rocket motors.

PROBLEM SOLVING INFORMATION FOR STATE AND LOCAL GOVERNMENTS

Energy. Studies in the areas of transportation of energetic liquid fuels.

Police, Fire and Emergency Service. Ranging communication systems.

APPLICATION AREA

EXPERTISE

General. Technology transfer; fire hazard and safety; life saving equipment for fire-fighters.

TRANSPORTATION

Marine and Waterway Transportation Studies in transportation of energetic liquid fuels.

Railroad Transportation. Transportation of energetic liquid fuels,

Road Transportation. Transportation of energetic liquid fuels.

General. Vehicles.

CONTACT: Mr. G. F. Linsteadt
Naval Weapons Center, Code 3803
China Lake, CA 93555
Telephone: (714) 939-2305/2575
Autovon: 245-2305/2575

OAK RIDGE NATIONAL LABORATORY
Oak Ridge, Tennessee 37830

APPLICATION AREA

EXPERTISE

BEHAVIOR AND SOCIETY Regional Resource Analysis.

BIOMEDICAL TECHNOLOGY AND HUMAN
FACTORS ENGINEERING

Bioengineering Biophysics and bioengineering.

Human Factors Engineering Effects of energy technology.

ENERGY

Miscellaneous Energy Conversion
and Storage Toroidal fusion reactor concepts;
neutral beam injection; supercon-
ducting magnet development, tritium
handling.

Energy Use, Supply and
Demand Improved materials and controls;
appliance and insulation standards;
energy use modeling.

Solar & Geothermal
Energy Low Temperature Heat Transfer; environ-
mental assessments.

Fuel Conversion Processes Coal conversion and combustion
engineering; high efficiency thermal
conversion; chemical and physical
properties of coal.

General Materials research; nuclear sciences;
molecular science, heavy ion research.

Nuclear Energy
Development Fuel Cycle Research and Development
Reactor Safety Research Breeder
Reactor Development.

Fusion Energy
Development Toroidal Fusion Reactor Concepts
Neutral Beam Injection Supercon-
ducting Magnet Development Tritium
Handling.

APPLICATION AREA

EXPERTISE

Fossil Energy. Coal Conversion & Combustion Engineering High-Efficiency Thermal Conversion Chemical and Physical Properties of Coal.

Conservation Improved Materials and Controls Appliance and Insulation Standards Energy Use Modeling.

ENVIRONMENTAL POLLUTION AND CONTROL

Environmental Health and Safety Environmental Effects of Energy Technology Toxicology, Carcinogenesis, Mutagenesis and Teratology. Biophysics and Bioengineering Environmental Policy Analysis.

MEDICINE AND BIOLOGY

Toxicology Toxicology, carcinogenesis, mutagenesis and teratology.

NUCLEAR SCIENCE AND TECHNOLOGY

General. Fuel cycle research and development; reactor safety research; breeder reactor development.

CONTACT:

Mr. Donald Jared
TU/C

Oak Ridge National Laboratory

P.O. Box X

Oak Ridge, TN 37830

Telephone: (615) 574-4193

FTS: 624-4193

APPLICATION AREA

NUCLEAR SCIENCE AND TECHNOLOGY

Radiation Effects
and Hardening.

EXPERTISE

Hardening of components to withstand
nuclear radiation.

CONTACT: Mr. David Pierce,
Chief, Technical
Management Branch
Rome Air Development Center
Griffiss AFB NY 13441
Telephone: (315) 330-2973

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ARMY RESEARCH INSTITUTE FOR THE BEHAVIORAL AND SOCIAL SCIENCES
Alexandria, Virginia 22333

APPLICATION AREA

EXPERTISE

ADMINISTRATION

Personnel Management, Labor
Relations and Manpower
Studies.

Selection, classification, and re-
cruitment of Army personnel; occu-
pational structure, duty modules,
task analysis; training management
technology.

Research Program Administration
and Technology
Transfer

Development, review, and conduct of
research program, including both in-
house and contract effort; adminis-
tration of grants in behavioral and
social sciences; Technical Cooper-
ation Program (international);
technical advisory service (within
DOD).

BEHAVIOR AND SOCIETY

Job Training and Career
Opportunities.

Training automation and simulation;
group skill development; on-the-job
training; career progression
systems; tracking of training tech-
nology transfer; policies and pro-
cesses affecting career commitment.

Organizational
Psychology

Organizational effectiveness tech-
nology; OE program evaluation; team
building; communication; leader
training and evaluation.

Social Concerns.

Human relations training development
and validation; race relations/equal
opportunity program management;
human resource utilization; role of
women in the Army; impact of family
variables on soldier productivity.

APPLICATION AREA

Education, Law,
and Humanities

EXPERTISE

Performance-based training and testing; self-instructional techniques and extension training; unit skill development and evaluation.

COMMUNICATION

Communication and Information
Theory

Battlefield information systems; man-machine interface; team operations with computerized command and control systems.

COMPUTER, CONTROL AND INFORMATION THEORY

Information Processing
Standards.

Development of computerized information systems for research and procedures for data analysis.

CONTACT:

Dr. R. M. Sasnor
U.S. Army Research Institute
5001 Eisenhower Avenue
Alexandria, Virginia 22333
Telephone: (202) 274-8641
Autovon: 284-8641

USDA - FOREST SERVICE
Equipment Development Center
San Dimas, CA 91773

APPLICATION AREA

EXPERTISE

AERONAUTICS AND AERODYNAMICS

Aeronautics. Retardant delivery, firefighting techniques, night flying.

Aircraft Retardant tanks and gating, IR installations.

AGRICULTURE AND FOOD

Agricultural Equipment. Plows, drills, furrowers, seeders, planters, sprayers.

DETECTION AND COUNTERMEASURES

Infrared and Ultraviolet Detection. Infrared equipment and techniques for fire detection.

ENERGY

Energy Sources Wood.

Energy Use Solar in remote environments, instrumentation, facilities.

ENVIRONMENTAL POLLUTION AND CONTROL

Noise Pollution and Control. Forest equipment noise, recreational vehicle noise, sound abatement.

Solid Waste Pollution and Control. Solid waste disposal in recreation areas.

Water Pollution and Control. Watershed pollution control.

GOVERNMENT INVENTIONS FOR LICENSING

Mechanical Devices and Equipment Spark arresters, seed collection equipment, plows, drills, tree planters, and other special forestry equipment.

APPLICATION AREA

EXPERTISE

MATERIALS SCIENCES

Corrosion and Corrosion Inhibition. . . Corrosive effects of chemical retardants on aircraft materials.

NATURAL RESOURCES

Forestry. Residue treatment and collection, fire equipment - pumps, hose, nozzles, tankers, retardants, recreation equipment, accessories for cable logging equipment, tree planters.

Natural Resource Management. Fire equipment - hose, nozzles, pumps, tankers, retardants; range improvement - drills, plow, sprayers, seeders.

Soil Sciences. Land reclamation - plows, drills, seed collection.

PHYSICS

Optics and Lasers. Use of LLL devices in nightflying for firefighting. Also infrared use for forestry applications.

CONTACT: Dr. Boone Y. Richardson
USDA Forest Service
Equipment Development Center
444 E. Bonita Avenue
San Dimas, CA, 91773

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SANDIA LABORATORIES
Albuquerque, New Mexico 87185

APPLICATION AREA

EXPERTISE

ADMINISTRATION

Engineering Systems
Management

Technical management. Fiscal controls. Program direction. Component development. Quality assurance.

AERONAUTICS AND AERODYNAMICS

Aeroballistics

Simulation, design and testing of individual and combinations of weapons and carriers.

Aerodynamics

Stability analysis, guidance and control, separation dynamics, flight simulation.

Parachutes
and Decelerators

Chute design and development, fabric development, flotation and recovery devices.

Test Facilities
and Equipment.

Wind tunnels, flow-field studies, atomic fluid physics, and aerophysics.

General.

Transport phenomena, heat shield, terradynamics.

ATMOSPHERIC SCIENCES

Dynamic Meteorology.

As affected by short term, rapid changes of state.

Physical Meteorology

Modeling and testing properties of atmosphere.

BIOMEDICAL TECHNOLOGY AND HUMAN
FACTORS ENGINEERING

Biosciences.

Reactor siting, nuclear risk assessment, sterilization of space probes, sewage sludge treatment.

APPLICATION AREA

EXPERTISE

Human Factors
Engineering

Man-machine interactions, interface
analysis.

BUILDING INDUSTRY TECHNOLOGY

Laminar Flow
Clean Room

Construction information and li-
censing information.

Laminar Flow Surgical
Operating Rooms

Construction information, and li-
censing information.

CHEMISTRY

Analytical Chemistry

Full range of instruments, techniques
and personnel.

Polymer Chemistry

As applied to engineering materials.

Photo and Radiation
Chemistry

Used conjointly with other appro-
priate sciences, non-destructive
testing, for example.

Physical and Theoretical
Chemistry

As applied to material modification
to withstand extreme environments.

CIVIL ENGINEERING

Soil and Rock
Mechanics

Terradynamics probes used for soil
and rock structural analysis.

COMMUNICATION

Graphics

Used in product definitions.

Communication and Information
Theory

Word processing methods research.

APPLICATION AREA

EXPERTISE

Detonations, Explosion Effects,
and Ballistics

Full spectrum of capabilities.

Fire Control and
Bombing Systems.

Full spectrum of capabilities.

PHOTOGRAPHY AND RECORDING DEVICES

Holography

Used only as an analytic and
diagnostic tool.

Photographic Techniques
and Equipment.

Used only as an analytic and
diagnostic tool.

PROBLEM SOLVING INFORMATION FOR STATE AND LOCAL GOVERNMENTS

Environment.

As evaluated for interaction with
our projects.

Transportation

Full line of technology as applied
to weapon and reactor fuel shipments.

TRANSPORTATION

Safety

As one of principal concerns in
weapon and reactor fuel shipments.

Security

As one of principal concerns in
weapon and reactor fuel shipments.

CONTACT:

G. Corry McDonald

Technology Utilization Program

Sandia Laboratories - 2436

Albuquerque, New Mexico 87185

Telephone: (505) 264-1947, or

FTS 457-1947

TARADCOM
(Midwest Region)

U.S. ARMY TANK-AUTOMOTIVE RESEARCH & DEVELOPMENT COMMAND
Warren, Michigan 48090

APPLICATION AREA

EXPERTISE

ELECTROTECHNOLOGY

General. Vehicle electrical systems.

ENERGY

Heating and Cooling
Systems. For military vehicles.

Engine Studies
(Energy Related) Monitoring of vehicle performance
characteristics.

ENVIRONMENTAL POLLUTION AND
CONTROL

Air Pollution
and Control. Emission controls for vehicles.

Noise Pollution
and Control. For Army tactical and logistic
vehicles.

INDUSTRIAL AND INFORMATION
SCIENCES

Environmental
Engineering. High temperature (hot/cold) charac-
teristics of vehicles.

CONTACT:

Stuart W. Argo
U.S. Army Tank-Automotive Research
and Development Command
ATTN: DRBTA-RGI
Warren, Michigan 48090
Telephone: 313 573-2372
Autovon: 273-2372

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Wallops Flight Center
National Aeronautics and Space Administration
Wallops Island, Virginia 23337

APPLICATION AREA

EXPERTISE

ADMINISTRATION

Research Program Administration
and Technology Transfer

Research and development planning,
contract management, technology
transfer program.

AERONAUTICS AND AERODYNAMICS

Aircraft

Surveillance, mapping, satellite
underflight, sensor research.

Airports

Airport-aircraft interface, air
traffic control, avionics systems
technology, noise reduction tech-
nology, airport environmental
studies, high speed turn-off tech-
niques, approach and landing systems,
and airport configuration.

General

Aircraft spin, cross-wind landings,
pilot performance, procedures and
aides at uncontrolled airport and
safety.

ATMOSPHERIC SCIENCE

Meteorological Data Collection,
Analysis and Weather
Forecasting

Atmospheric dynamics, densities and
winds as measured from satellites,
rockets and balloons. Ozone measure-
ments a specialty.

ELECTROTECHNOLOGY

Antennas

Design, applications and operations.

Electromechanical Devices

Payload instruments.

Telemetry

Design, applications and operations.
Instrumented vans.

APPLICATION AREA

EXPERTISE

OCEAN TECHNOLOGY AND ENGINEERING

Dynamic Oceanography.

Study of waves, currents, tides and
air-sea interaction.

ORDNANCE

Rockets

Building up rockets, handling and
launching.

CONTACT: Gilmore H. Trafford
Technology Utilization Officer
Wallops Flight Center
Wallops Island, Virginia 23337
Telephone: (804) 824-3411, ext. 2201
FTS: 928-5201

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SECTION III.

MEMBER LABORATORIES
BY GEOGRAPHIC REGION

MEMBER LABORATORIES BY GEOGRAPHIC REGION

NORTHEAST REGION

Department of Agriculture

Forest Service

Forest Environment Project	Pennington, NJ
Forest Environment Research Unit	Amherst, MA
Forest Insect and Disease Laboratory	Hamden, CT
Forest Science Laboratory	Durham, NH
Forest Science Laboratory	Syracuse, NY
Sugar Maple Laboratory	Burlington, VT
Timber Research Laboratory	Orono, ME

Department of Defense

Air Force

Air Force Geophysics Laboratory	Hanscom, MA
Rome Air Development Center	Griffiss AFB, NY

Army

Army Research Institute of Environmental Medicine	Natick, MA
Army Armament R&D Command	Dover, NJ
Army Cold Regions Research and Engineering Laboratory	Hanover, NH
Army Electronics R&D Command	Fort Monmouth, NJ
Army Materials and Mechanics Research Center	Watertown, MA
Army Natick R&D Command	Natick, MA

Navy

Naval Air Engineering Center	Lakehurst, NJ
Naval Underwater Systems Center	New London, CT

Department of Energy

Brookhaven National Laboratory	Upton, NY
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Environmental Protection Agency

Environmental Research Laboratory Narragansett, RI

Department of Interior

Fish and Wildlife Service

Atlantic Salmon Investigations Orono, ME

Tunison Laboratory of Fish Nutrition Cortland, NY

Department of Transportation

Coast Guard R&D Center Groton, CT

National Aviation Facilities Experimental Center Atlantic City, NJ

Transportation Systems Center Cambridge, MA

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MID-ATLANTIC REGION

Department of Agriculture

Forest Service

Equipment Development Activity	Washington, D.C.
Forest Products and Marketing Laboratory	Princetown, WV
Forestry Sciences Laboratory	Blacksburg, VA
Forestry Sciences Laboratory	Morgantown, WV
Forestry Sciences Laboratory	Warren, PA
Northeastern Forest and Range Experiment Station	Upper Darby, PA
Physiology Laboratory	Beltsville, MD
Research Laboratories	Washington, D.C.
Timber and Watershed Laboratory	Parsons, WV

Department of Commerce

National Bureau of Standards	Washington, D.C.
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Department of Defense

Army

Army Engineer Topographic Laboratory	Fort Belvoir, VA
Army Human Engineering Laboratory	Aberdeen, MD
Army Institute of Dental Research	Washington, D.C.
Army Medical Bioengineering Research	Frederick, MD
Army Medical Research Institute of Infectious Diseases	Frederick, MD
Army Mobility Equipment R&D Command	Fort Belvoir, VA
Army Night Vision & Electro-Optics Laboratories	Fort Belvoir, VA
Army Research Institute for Behavioral and Social Sciences	Alexandria, VA
Chemical Systems Laboratory	Aberdeen, MD
Coastal Engineering Research Center	Fort Belvoir, VA
Harry Diamond Laboratory	Adelphi, MD
Walter Reed Army Institute Research	Washington, D.C.

Navy

David W. Taylor Naval Ship R&D Center	Bethesda, MD
Naval Air Development Center	Warminster, PA
Naval Explosive Ordnance Disposal Center	Indian Head, MD

Naval Oceanographic Office Washington, D.C.
 Naval Research Laboratory Washington, D.C.
 Naval Surface Weapons Center White Oak, MD

Health, Education and Welfare

Medical Devices Laboratory Silver Spring, MD

Department of Interior

Fish and Wildlife Service

Eastern Fish Disease Laboratory Kearneysville, WV
 Fish and Wildlife National Teams Washington, D.C.
 Migratory Bird and Habitat Research Laboratory Laurel, MD
 National Fish and Wildlife Research Laboratories Washington, D.C.
 Patuxent Wildlife Research Center Laurel, MD

Department of Justice

Federal Bureau of Investigation Washington, D.C.

National Aeronautics and Space Administration (NASA)

Goddard Space Flight Center Greenbelt, MD
 Langley Research Center Hampton, VA
 Wallops Flight Center Wallops, VA

Department of Transportation

Fairbank Highway Research Station Washington, D.C.

SOUTHEAST REGION

Department of Agriculture

Forest Service

Coweeta Hydrologic Laboratory	Franklin, NC .
Forest Fire Laboratory	Macon, GA
Forest Hydrology Laboratory	Oxford, MS
Forest Recreation Unit	Tuskegee, AL
Forest Resources Laboratory	Lehigh Acres, FL
Forest Tree Seed Laboratory	State College, MS
Forestry Recreation Unit	Clemson, SC
Forestry Sciences Laboratory	Athens, GA
Forestry Sciences Laboratory	Auburn, AL
Forestry Sciences Laboratory	Berea, KY
Forestry Sciences Laboratory	Charleston, SC
Forestry Sciences Laboratory	Marianna, FL
Forestry Sciences Laboratory	Research Triangle, NC
Institute of Forest Genetics and Forest Insect and Disease Laboratory	Gulfport, MS
Institute of Tropical Forestry	Pio Piedras, Puerto Rico
Naval Stores and Timber Product Laboratory	Olustee, FL
Silviculture Laboratory	Sewanee, TN
Southeastern Forest Experiment Station	Asheville, NC
Southern Hardwoods Laboratory	Stoneville, MS

Department of Defense

Air Force

Air Force Engineering and Services Center	Tyndall AFB, FL
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Army

Army Aeromedical Research Laboratory	Fort Rucker, AL
Army Engineers Waterways Experiment Station	Vicksburg, MS
Army Missile R&D Command	Redstone Arsenal, AL

Navy

Naval Coastal Systems Laboratory	Panama City, FL
Naval Oceanographic Office	Bay St. Louis, MS

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Department of Energy

Oak Ridge National Laboratory Oak Ridge, TN

Department of Interior

Fish and Wildlife Service

Southeastern Fish Cultural Laboratory Marion, AL

National Coastal Ecosystems Team Bay St. Louis, MS

Environmental Protection Agency

Environmental Monitoring and Support Laboratory . . . Research Triangle Park, NC

Environmental Sciences Research Laboratory . . . Research Triangle Park, NC

Health Effects Research Laboratory . . . Research Triangle Park, NC

Industrial Environmental Research Laboratory . . . Research Triangle Park, NC

National Aeronautics and Space Administration (NASA)

George Marshall Space Flight Center Marshall SFC, AL

Kennedy Space Center Kennedy SC, FL

National Space Technology Lab Bay St. Louis, MS

Tennessee Valley Authority

Tennessee Valley Authority Chattanooga, TN

MIDWEST REGION

Department of Agriculture

Forest Service

Forest Engineering Laboratory	Houghton, MI
Forest Insect and Disease Laboratory	Delaware, OH
Forest Products Laboratory	Madison, WI
Forestry Sciences Laboratory	Carbondale, IL
Institute of Forest Genetics	Rhineland, WI
North Central Forest Experiment Station	St. Paul, MN
Northern Conifers Laboratory	Grand Rapids, MN
Northern Hardwoods Laboratory	LaCrosse, WI

Department of Defense

Air Force

Air Force Aeropropulsion Laboratory	Wright-Patterson, OH
Air Force Avionics Laboratory	Wright-Patterson, OH
Air Force Materials Laboratory	Wright-Patterson, OH
Air Force Wright Aeronautical Laboratory	Wright-Patterson, OH

Army

Army Construction Engineering Research Laboratory	Champaign, IL
Army Tank-Automotive R&D Command	Warren, MI

Navy

Naval Weapons Support Center	Crane, IN
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Department of Energy

Argonne National Laboratory	Argonne, IL
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Department of Interior

Fish and Wildlife Service

Fish Control Laboratory	LaCrosse, WI
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Great Lakes Fishery Laboratory Ann Arbor, MI
National Fish and Wildlife Health Laboratory Madison, WI
National Power Plant Team Ann Arbor, MI

Environmental Protection Agency

Industrial Environmental Research Laboratory Cincinnati, OH

Health, Education and Welfare

National Institute for Occupational Safety
and Health Cincinnati, OH

National Aeronautics and Space Administration (NASA)

Lewis Research Center Cleveland, OH

MID-CONTINENT REGION

Department of Agriculture

Forest Service

Alexandria Forestry Center	Alexandria, LA
Equipment Development Center	Missoula, MT
Forest Range and Watershed Laboratory	Laramie, WY
Forestry Research Laboratory	Rapid City, SD
Forestry Science Laboratory	Albuquerque, NM
Forestry Science Laboratory	Bozeman, MT
Forestry Sciences Laboratory	Fayetteville, AR
Forestry Sciences Laboratory	Logan, UT
Forestry Sciences Laboratory	Missoula, MT
Intermountain Forest and Range Experiment Station	Ogden, UT
Northern Forest Fire Laboratory	Missoula, MT
Rocky Mountain Forest and Range Experiment Station	Fort Collins, CO
Shelterbelt Laboratory	Bottineau, ND
Shelterbelt Laboratory	Lincoln, NE
Shrub Improvement Laboratory	Provo, UT
Southern Forest Experiment Station	New Orleans, LA
Wildlife Habitat and Silviculture Laboratory	Nacogdoches, TX

Department of Defense

Air Force

Air Force Aerospace Medical Division	Brooks AFB, TX
Air Force Human Resources Laboratory	Brooks AFB, TX
Air Force Weapons Laboratory	Kirtland AFB, NM

Army

Army Institute of Surgical Research	Fort Sam Houston, TX
Dugway Proving Grounds	Dugway, UT

Department of Energy

Los Alamos Scientific Laboratory	Los Alamos, NM
Sandia Laboratories	Albuquerque, NM
Solar Energy Research Institute	Golden, CO

Department of Interior

Fish and Wildlife Service

Fish Farming Experimental Station	Stuttgart, AR
Editorial Office	Fort Collins, CO
Denver Wildlife Research Center	Denver, CO
Fish Genetics Laboratory	Beulah, WY
Fish-Pesticide Research Laboratory	Columbia, MO
National Energy & Land Use Team	Fort Collins, CO
National Reservoir Research Program	Fayetteville, AR
National Stream Alterations Team	Columbia, MO
Northern Prairie Wildlife Research Center	Jamestown, ND

Department of Commerce

National Telecommunication and Information Administration

Institute for Telecommunication Sciences	Boulder, CO
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National Aeronautics and Space Administration (NASA)

Lyndon B. Johnson Space Center	Houston, TX
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FAR WEST REGION

Department of Agriculture

Forest Service

Boise Interagency Fire Center	Boise, ID
California Rangeland Project	Fresno, CA
Equipment Development Center	San Diego, CA
Forest Engineering Laboratory	Seattle, WA
Forest Fire Laboratory	Riverside, CA
Forest Hydrology Laboratory	Tempe, AZ
Forest Hydrology Laboratory	Wenatchee, WA
Forestry Sciences Laboratory	Boise, ID
Forestry Sciences Laboratory	Corvallis, OR
Forestry Sciences Laboratory	Flagstaff, AZ
Forestry Sciences Laboratory	Juneau, AK
Forestry Sciences Laboratory	Moscow, ID
Forestry Sciences Laboratory	Olympia, WA
Institute of Northern Forestry	Fairbanks, AK
Institute of Pacific Island Forestry	Honolulu, HI
Pacific Northwest Forest and Range Experiment Station	Portland, OR
Pacific Southwest Forest and Range Experiment Station	Berkeley, CA
Range and Wildlife Habitat Laboratory	LaGrande, OR
Range Research Laboratory	Tucson, AZ
Redwoods Laboratory	Arcata, CA
Silviculture Laboratory	Bend, OR
Silviculture Laboratory	Redding, CA

Department of Defense

Air Force

Air Force Rocket Propulsion Laboratory	Edwards, CA
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Army

Letterman Army Institute of Research	San Francisco, CA
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Navy

Civil Engineering Laboratory	Port Hueneme, CA
Naval Biosciences Laboratory	Oakland, CA
Naval Health Research Center	San Diego, CA
Naval Ocean Systems Center	San Diego, CA
Naval Postgraduate School	Monterey, CA
Naval Weapons Center	China Lake, CA
Navy Personnel R&D Center	San Diego, CA

Department of Energy

Lawrence Berkeley Laboratory	Berkeley, CA
Lawrence Livermore Laboratory	Livermore, CA

Department of Interior

Fish and Wildlife Service

Pyramid Lake Project	Reno, NV
Western Fish Disease Laboratory	Seattle, WA

United States Geological Survey

United States Geological Survey	Menlo Park, CA
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National Aeronautics and Space Administration (NASA)

Ames Research Center	Moffett Field, CA
Hugh L. Dryden Flight Research Center	Edwards, CA
Jet Propulsion Laboratory	Pasadena, CA

SECTION IV.

MEMBER LABORATORY REPRESENTATIVES,
BY GEOGRAPHIC REGION

MEMBER LABORATORY REPRESENTATIVES
BY GEOGRAPHIC REGION

NORTHEAST REGION

AIR FORCE GEOPHYSICS LABORATORY

Dr. John N. Howard
Chief Scientist
Hanscom AFB, MA 01731
Tele: (617) 861-3601
A/V: 478-3601

ARMY ARMAMENT R&D COMMAND

Mr. Thomas C. Castorina
Dover, NJ 07801
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A/V: 880-2560

ARMY COLD REGIONS RES & ENG LAB

Dr. Andrew Assur
Chief Scientist
P.O. Box 282
Hanover, NH 03755
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ARMY ELECTRONICS R&D COMMAND LABS

Dr. Walter S. McAfee
Scientific Advisor
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Fort Monmouth, NJ 07703
Tele: (201) 544-4131
A/V: 995-4131

ARMY MATERIALS AND MECHANICS
RESEARCH CENTER

Mr. Raymond L. Farrow
Attn: Code DRXMR-PT
Watertown, MA 02172
Tele: (617) 923-3521
A/V: 955-3521

ARMY NATICK R&D COMMAND

Dr. S. David Bailey, Director
Food Sciences Lab
Natick, MA 01760
Tele: (617) 653-1000, X-2577
A/V: 955-2577

BROOKHAVEN NATIONAL LABORATORY

Mr. William Graves
Technology Utilization Officer
Building 460
Upton, NY 11973
Tele: (516) 345-3326
FTS: 664-3326

COAST GUARD R&D CENTER

Mr. Michael D'Angelo
Asst. Director for Adm. & Services
Avery Point
Groton, CT 06340
Tele: (203) 445-8501

ENVIRONMENTAL RESEARCH LABORATORY

Dr. Stanley H. Hergre
EPA
South Ferry Road
Narragansett, RI 02880
Tele: (401) 789-1071

NATIONAL AVIATION FACILITIES

EXPERIMENTAL CENTER
Mr. James Woodall
Technical Advisor to the Director
Building 12, ANA-1A
Atlantic City, NJ 08405
Tele: (609) 641-8200, X-3670

NAVAL AIR ENGINEERING CENTER

Mr. Michael Palamar
Code 9011
Lakehurst, NJ 08733
Tele: (215) 323-2391
A/V: 624-2391

NAVAL UNDERWATER SYSTEMS CENTER

Mr. Michael Ahrens
Code 0702, Bldg. 80T
New London, CT 06320
Tele: (203) 447-4908
A/V: 636-4908

ROME AIR DEVELOPMENT CENTER

Mr. David Pierce

Code RADC-DOT

Griffiss AFB, NY 13441

Tele: (315) 330-2973

A/V: 587-2973

TRANSPORTATION SYSTEMS CENTER

Mr. R. V. Giangrande

DOT

Mail Code: 15

Kindall Square

Cambridge, MA 02142

Tele: (617) 494-2486

MID-ATLANTIC REGION

ARMY ENGINEER TOPOGRAPHIC LABORATORY

Dr. Kenneth R. Kothe
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Fort Belvoir, VA 22060
Tele: (703) 664-5828
A/V: 354-5828

ARMY HUMAN ENGINEERING LAB

Mr. Donald Egner
Aberdeen, MD 21005
Tele: (301) 278-4567/4168
A/V: 283-4567/4168

ARMY MEDICAL R&D LABORATORIES

Mr. Lawrence Ware
Army Medical R&D Command
Fort Detrick Bldg. 521
Frederick, MD 21701
Tele: (301) 663-7325
A/V: 343-7325

ARMY MOBILITY EQUIPMENT R&D COMMAND

Dr. Karl H. Steinbach
Attn: DRDME-ZK
Fort Belvoir, VA 22060
Tele: (703) 664-4970/3330
A/V: 354-4970/3330

ARMY NIGHT VISION & ELECTRO-OPTICS LABORATORIES

Mr. Richard V. Fulton
Attn: DELNV-D
Fort Belvoir, VA 22060
Tele: (703) 664-3923
A/V: 354-3923

ARMY RESEARCH INSTITUTE FOR BEHAVIORAL AND SOCIAL SCIENCES

Dr. R. M. Sasmor
3001 Eisenhower Blvd.
Alexandria, VA 22333
Tele: (202) 274-8641
A/V: 284-8641

CHEMICAL SYSTEMS LABORATORY

Dr. B. L. Harris
Aberdeen Proving Ground, MD 21010
Tele: (301) 671-2031
A/V: 584-4363
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SECTION V.
INDEX OF APPLICATION AREAS

FEDERAL LABORATORY SCIENTIFIC AND TECHNICAL ACTIVITIES

APPLICATION AREA

LABORATORY

ADMINISTRATION

Computer Application	ARRADCOM, HDL, NWC, NUSC, WES
Inventory Control.	CERL, KSC, LaRC, LBL, LLL, NUSC, NWC
Management Practice.	AFAPL, AMMRC, ARRADCOM, CERL, HRL, NPRDC, NUSC, NWC, NWSC
Management Information	AFAPL, AMMRC, ARRADCOM, CERL, KSC, NADC, NCSL, NOSC, NPRDC, NRDC, NUSC, NWC, NWSC, WES
Personnel Management, Labor Relations and Manpower Studies.	HRL, LBL, LLL, NADC, NPRDC, NUSC, NWB, NWSC, RIBSS
Personnel Selection and Classification.	HRL
Research Program Administration and Technology Transfer.	AFAPL, AFESC, AMD, AMMRC, ARRADCOM, CERL, CSL, FHRS, FSR, HDL, HERLR, HRL, IERLR, INT, KSC, LaRC, LASL, LeRC, LLL, MERADCOM, NADC, NC, NCSL, NE, NOSC, NPRDC, NSWC, NUSC, NWC, NWSC, PNW, PSW, RIBSS, RM, SE, SO, WES, WFC
General.	ARRADCOM, NUSC

AERONAUTICS AND AERODYNAMICS

Aeroballistics	CSL, NADC, NWC, SL
Aerodynamics	AFAPL, AFWL, AFWL, DTNSRDC, ESRLR, LaRC, LeRC, NADC, NSWC, NWC, SL
Aeronautics.	AFWL, LaRC, NADC, NWC, SDEDC

APPLICATION AREA

LABORATORY

Aircraft AFWAL, AMD, BIFC, LaRC, NADC, NAFES,
NWC, SDEDC, WFC

Airports AMD, NAFEC, WES, WFC

Parachutes and Decelerators AFWAL, LaRC, MEDC, NADC, NRDC,
NSWC, NWC, NWSC, SL

Avionics AFWAL, AFWAL, AMD, BIFC, KSC, LaRC,
NADC, NAFEC, NWC

Test Facilities and Equipment AFWAL, AMD, DTNSRDC, ESRLR, FHRs,
KSC, LaRC, LERC, NADC, NAFEC, NSWC,
NWC, SL, WES

General LaRC, NAFEC, NWC, SL, WES, WFC

AGRICULTURE AND FOOD

Agricultural Chemistry KSC, LASL, NWC

Agricultural Economics NWC

Agricultural Equipment,
Facilities, and Operations FSED, LASL, MEDC, SDEDC

Agricultural Resource Surveys KSC

Agronomy, Horticulture, and
Plant Pathology KSC

Animal Husbandry and
Veterinary Medicine LASL, NBL, NOSC

Fisheries and Aquaculture NOSC, NUSC, ORNL

Food Technology NRDC

General NWC

ASTRONOMY AND ASTROPHYSICS

Astrogeology LASL, LLL, USGS

Astronomy and Celestial
Mechanics ETL, LLL

APPLICATION AREALABORATORY

Astrophysics AFGL, KSC, LASL, LLL, NADC
Cosmic Ray Research. LASL, LBL, LLL
General. LASL
Solar Physics. AFGL

ATMOSPHERIC SCIENCES

Aeronomy AFGL, AFWL, ESRLR, KSC, LaRC, LBL, LLL
Dynamic Meteorology BIFC, ESRLR, KSC, LaRC, LLL, SL
Meteorological Data Collection,
Analysis and Weather
Forecasting. AFGL, BIFC, ESRLR, FFL, KSC, LaRC,
LASL, LLL, NADC, NWC, WFO, WFC
Meteorological Instruments and
Instrument Platforms ADPG, AFGL, BIFC, FFL, KSC, LaRC,
LASL, LLL, NWC, SL
Monitoring AFGL, CSL, EMSLR, HDL, NWC, USGS,
Physical Meteorology. AFGL, ESRLR, HDL, KSC, LASL, LLL,
NSWC, SL
Weather Modification ESRLR, LLL, LSC, NWC, NWSC
General. ADPG, KSC, NWC, SL

BEHAVIOR AND SOCIETY

Education, Law, and Humanities. RIBSS
International Relations.
Job Training and Career
Development. AMMRC, HRL, LaRC, LASL, LLL, NADC,
NHRC, NPRDC, NWC, RIBSS
Psychology CERL, HRL, NADC, NPRDC, NUSC,
NSWC, RIBSS

APPLICATION AREA

LABORATORY

Social Concerns. HRL, NIOSH, NPRDC, RIBSS

General. HRL

BIOMEDICAL TECHNOLOGY AND HUMAN FACTORS ENGINEERING

Biomedical Instrumentation
and Bioengineering AMD, HDL, HERLR, KSC, LaRC, LASL,
LBL, LLL, MDL, NCSL, NOSC, NUSC,
NWC, ORNL

Bionics and Artificial
Intelligence KSC, NOSC

Human Factors Engineering. HEL, KSC, LaRC, LASL, MEDC, NADC,
NOSC, NPRDC, NUSC, ORNL, SL

Life Support Systems CSL, HDL, KSC, LASL, NADC, NCSL,
NOSC, NWC, NSWC

Prosthetics and Mechanical
Organs AMRDC, HDL, KSC, LASL, LaRC, MDL,
NSWC

Tissue Preservation and
Storage. HERLR

General. HDL, KSC, LASL, ORNL, SL

BUILDING INDUSTRY TECHNOLOGY

Architectural Design and
Environmental Engineering. CERL, KSC, LaRC, LASL, LBL, LLL,
NBL, NWC, SL, WES

Building Equipment, Furnishings
and Maintenance. CERL, LaRC, SL

Building Standards and Codes CERL, KSC, NWSC, SL, WES

Construction Management and
Techniques CERL, KSC, LaRC, NWSC, WES

Construction Materials,
Components and Equipment CEL, CERL, DTNSRDC, KSC, MERADCOM

APPLICATION AREA

LABORATORY

Structural Analyses. CEL, DTNSRDC, KSC, LaRC, MERADCOM,
NWC, NWS, WES

General. SL, WES

BUSINESS AND ECONOMICS

Banking and Finance.

Consumer Affairs.

Domestic Commerce, Marketing
and Economics. AMMRC, LBL, LLL

Foreign Industry Development
and Economics.

Minority Enterprises. LeRC

General. NWC

CHEMISTRY

Analytical Chemistry. ADPG, AFAPL, AFESC, AFML, AMMRC,
FBI, HERLR, KSC, LASL, LeRC, LLL,
MERADCOM, NADC, NBL, NIOSH, NOSC,
NRDC, NRL, NSWC, NWC, NWS, ORNL,
SL, WES

Basic and Synthetic Chemistry. CSL, LaRC, LASL, LBL, LeRC, LLL,
NSWC, NWC, NWS, ORNL

Industrial Chemistry and
Chemical Process Engineering. AFML, CSL, LASL, LBL, LeRC, LLL,
NSWC, NWC, NWS, ORNL, WES

Photo and Radiation Chemistry. ESRLR, ETL, LaRC, LASL, LBL, LeRC,
LLI, NADC, NOSC, NSWC, NWC, NWS,
ORNL, SL

Physical and Theoretical
Chemistry. AFGL, CSL, ESRLR, HDL, KSC, LaRC,
LASL, LBL, LeRC, LLL, MERADCOM,
NRL, NSWC, NWC, NWS, ORNL, SL,
WES

APPLICATION AREA

LABORATORY

Polymer Chemistry. AFML, BNL, HDL, KSC, LeRC, LeRC,
LLL, MERADCOM, NADC, NOSC, NRL,
NSWC, NWC, SL, WES

General. ARRADCOM, CSL, NADC, NWC

CIVIL ENGINEERING

Civil Engineering. AFESC CEL, CERL, FSED, MERADCOM,
NWSC, WES

Construction Equipment,
Materials and Supplies AFESC, CEL CERL, MERADCOM, NWC,
NWSC, WES

Earthquake Design. CEL, LLL, WES

Flood Control. WES

Highway Engineering. CERL, FHRS, FSED, NWSC, WES

Hydraulic Engineering. WES

Soil and Rock Mechanics. AFESC, AFWL, CEL, FSED, KSC, LASL,
LLL, NWC, NWSC, SL, WES

General. ETL, LASL

COMMUNICATION

Common Carrier and Satellite AFGL, ITS, KSC, LeRC, NADC, NOSC,
NUSC

Communication and Information
Theory AMD, ITS, KSC, LASL, LLL, NADC,
NOSC, NUSC, NWC, ORNL, RIBSS, SL

Graphics ITS, KSG, NADC, NUSC, NWC, ORNL,
SL, WES

Policies, Regulations and
Studies. ITS

Radio and Television
Equipment. BIFC, HDL, ITS, KSC, LASL, LLL,
NOSC, NWC, NWSC

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APPLICATION AREA

LABORATORY

Social political ITS
Verbal ITS, NADC
General. ITS, NADC, RADC, TSC

COMPUTERS, CONTROL AND INFORMATION THEORY

Computer Hardware. AFWL, ARRADCOM, BNL, CERL, ETL,
KSC, LaRC, LASL, LBL, LLL, NADC,
NOSC, NSWC, NUSC, NWC NWSC, ORNL,
WES
Computer Software. AFWL, AMMRC, ARRADCOM, BNL, CERL,
CSL, DTNSRDC, ETL, HDL, HRL, KSC,
LaRC, LASL, LBL, LLL, MERADCOM,
NADC, NAEC, NOSC, NPRDC, NSWC, NUSC,
NWC, NWSC, ORNL, SL, WES
Control Systems and Control
Theory AFWL, ARRADCOM, HDL, KSC, LaRC,
LASL, LBL, LeRC, LLL, NADC, NOSC,
NSWC, NWC, NWSC, ORNL
Information Processing
Standards. CERL, KSC, LaRC, LeRC, LLL, NAEC,
NWC, NWSC, ORNL, RIBSS, WES
Information Theory KSC, LaRC, LLL, NAEC, NOSC, NWSC,
ORNL
Pattern Recognition and
Image Processing BNL, CSL, ETL, HDL, KSC, LaRC, LASL,
LBL, LLL, NAEC, NOSC, NSWC, NUSC,
NVEOL, NWC, ORNL, SL, WES
General. HDL, NADC

DETECTION AND COUNTERMEASURES

Acoustic Detection AFWL, CERL, DTNSRDC, HDL, KSC, LaRC,
LASL, MERADCOM, NADC, NCSL, NOSC,
NSWC, NUSC, NWC, WES

APPLICATION AREA

LABORATORY

Electromagnetic and Acoustic Countermeasures	AFAL, CSL, HDL, KSC, NADC, NCSL, NOSC, NUSC, NWC, NWSC, RADC, WES
Infrared and Ultraviolet Detection	AFAL, AFGL, AFWL, BIFC, HDL, KSC, LaRC, LLL, MERADCOM, NADC, NSWC, NUSC, NVEDL, NWC, SDEDC, SL, WES
Magnetic Detection.	AFAL, HDL, KSC, MERADCOM, NADC, NCSL, NSWC, NWC, WES
Nuclear Explosion Detection . .	AFGL, AFWL, LASL, NOSC, SL
Optical Detection	AFAL, AFGL, AMD, ETL, KSC, NADC, NOSC, NSWC, NUSC, NVEDL, NWC, NWSC, WES
Personal Detection.	AFAL, ETL, HDL, MERADCOM, NADC, NCSL, NOSC, NVEOL, NWC, RADC, SL, WES
Radio Frequency Detection . . .	AFAL, KSC, LLL, MERADCOM, NADC, NUSC, NWC, NWSC
Seismic Detection	AFGL, KSC, LASL, LLL, MERADCOM, NCSL, NSWC, SL, USGS, WES
General	BIFC, HDL, NADC, RADC, WES

ELECTROTECHNOLOGY

Antennas.	AFAL, HDL, KSC, LaRC, LASL, LeRC, LLL, MERADCOM, NADC, NOSC, NSWC, NUSC, NWC, NWSC, RADC, SL, WFC
Circuits.	AFAL, AFAPL, AFWL, HDL, KSC, LaRC, LASL, LeRC, LLL, MERADCOM, NADC, NOSC, NSWC, NUSC, NWC, NWSC, ORNL, RADC
Electromechanical Devices . . .	AFAL, AFAPL, KSC, LaRC, LASL, LeRC, LLL, MERADCOM, NADC, NCSL, NOSC, NSWC, NWC, NWSC, ORNL, WFC
Electron Tubes.	AFAL, KSC, LASL, LeRC, LLL, NWC, NWSC

APPLICATION AREA

LABORATORY

Optoelectronic Devices and
Systems

AFWL, ETL, HDL, KSC, LeRC, LASL,
LBL, LLL, NADC, NOSC, NSWC, NUSE,
NVEDL, NWC, NWSC, ORNL

Power and Signal Transmission
Devices

AFAPL, CEL, HDL, KSC, LeRC, LASL,
LeRC, LLL, MERADCOM, NOSC, NSWC,
NWC, NWSC, ORNL, RADC

Resistive, Capacitive and
Inductive Components

AFAPL, HDL, KSC, LASL, LBL, LeRC,
LLL, NSWC, NWSC

Semiconductor Devices

AFAPL, HDL, KSC, LeRC, LASL, LeRC,
LLL, MERADCOM, NOSC, NRL, NSWC,
NVEDL, NWC, NWSC, ORNL

Telemetry

WFC

General

HDL, LASL, MERADCOM, NOSC, NRL, NWC,
NWSC, ORNL, RADC, TARADCOM

ENERGY

Batteries and Components

LeRC, LLL, MERADCOM, NADC, NSWC,
NUSC, NWC

Electric Power Production

IERLR, LeRC, LLL, MERADCOM, NADC,
NWC, NWSC, ORNL

Electric Power Transmission

BNL, CERL, DTISRDC, KSC, LASL,
MERADCOM, NWSC, ORNL

Energy Conversion and Storage

HDL

Energy Sources

AFAPL, FSED, LeRC, SDEDC

Energy Transmission

Energy Use, Supply and
Demand

AFAPL, CERL, FED, FSR, HDL, KSC,
LASL, LBL, LLL, NADC, NSWC, NWC,
NWSC, ORNL, SDEDC, TSC, USGS

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APPLICATION AREA

LABORATORY

Engine Studies (Energy Related)	AFAPL, AMRC, DTNSRDC, KSC, LASL, LBL, LeRC, LLL, MERADCOM, NADC, NUSC, NWSC, ORNL, TARADCOM
Environmental Studies	AFESC, CERL, EMSLR, ESRLR, HERLR, IERLR, LASL, LBL, LLL, NUSC, NWC, ORNL, WES
Fuel Conversion Processes	AFAPL, AMD, CERL, FSED, IERLR, LASL, LBL, LeRC, LLL, MERADCOM, NOSC, NWC, NWSC, ORNL
Fuels	AFAPL, AFESC, BNL, CEL, DTNSRDC, EMSLR, IERLR, LBL, LeRC, LLL, MERADCOM, NADC, NRL, NWC, NWSC, ORNL
Geothermal Energy	ERL, LASL, LBL, LLL, NWC, ORNL, USGS
Heating and Cooling Systems	CEL, KSC, LaRC, LASL, LBL, LeRC, LLL, MERADCOM, NOSC, ORNL, TARADCOM
Miscellaneous Energy Conversion and Storage	AFAPL, AFESC, CEL, KSC, LASL, LBL, LeRC, LLL, MERADCOM, NSWC, NUSC, ORNL
Policies, Regulations and Studies	BNL, LASL, LBL, LLL, NWC
Selected Studies in Nuclear Technology	BNL, LASL, LBL, LLL, ORNL, WES
Solar Energy	AFAPL, AFESC, BNL, CEL, CERL, CGRDC, KSC, LaRC, LASL, LBL, LeRC, LLL, MERADCOM, NOSC, NUSC, NWC, ORNL
Reserves	LLL, NOSC, ORNL
General	AFESC, BNL, CERL, LASL, LBL, LeRC, LLL, NADC, NWC, NWSC, ORNL, USGS

APPLICATION AREA

LABORATORY

ENVIRONMENTAL POLLUTION AND CONTROL

Air Pollution and Control. ADPG, AFAPL, AFESC, AFGL, AMD, BNL, CEL, CERL, CSL, EMSLR, HDL, IERLR, KSC, LaRC, LASL, LBL, LeRC, LLL, MERADCOM, NAEC, NBL, NSWC, NWC, NWSC, ORNL, TARADCOM, TSC

Ecological Assessment: CEL

Marine Pollution Technology. CGRDC

Noise Pollution and Control. AFESC, AMD, CEL, CERL, DTNSRDC, HEL, KSC, LaRC, LASL, LeRC, MERADCOM, NOSC, NSWC, NUSC, NWC, NWSC, SDEDC, TARADCOM, TSC

Solid Wastes Pollution and Control. AFESC, CEL, CERL, CSL, DTNSRDC, FSR, IERLR, KSC, LLL, NAEC, NCSL, NRDC, NWC, NWSC, ORNL, SDEDC, SL, WES

Water Pollution and Control. AFESC, ARRADCOM, CEL, CERL, CLS, CSL, DTNSRDC, ERL, IERLR, KSC, LaRC, LBL, LLL, MERADCOM, NADC, NAEC, NBL, NCSL, NOSC, NRDC, NWC, NWSC, ORNL, SDEDC, WES

Pesticides Pollution and Control. CSL, KSC, MEDC, NBL, WES

Radiation Pollution and Control. BNL, KSC, LASL, LBL, LeRC, LLL, MERADCOM, NOSC, NSWC, NWC, ORNL, RADC, SL

Environmental Health and Safety AMRDC, HERLR, KSC, LASL, LBL, LeRC, LLL, NADC, NBL, NWC, NWSC, ORNL, SL, WES

Environmental Impact Statement. ADPG, AFESC, AFGL, AFWL, CERL, CSL, KSC, LASL, LLL, NBL, NUSC, NWC, ORNL, SL, WES

APPLICATION AREA

LABORATORY

General. ADPG, ARDC, CEL, CSL, KSC, LASL,
LBL, NADC, ORNL, WES

ENVIRONMENTAL RESOURCE MANAGEMENT

Marsh Creation for Wildlife
Habitats WES

Recreation Planning. WES

Fisheries Development. WES

Water-Quality Evaluation WES

Water-Quality and Ecological
Simulation Models. WES

Water-Resources Analysis WES

Land Treatment of Wastewater WES

GOVERNMENT INVENTIONS FOR LICENSING

Biology and Medicine BNL, KSC, LaRC, LASL, LBL, LLL,
NOSC, ORNL

Chemistry. LaRC, LBL, LLL, NUSC, ORNL

Electrotechnology. CEL, HDL, KSC, LaRC, NUSC, ORNL

Food Technology.

Instruments. CEL, HDL, KSC, LaRC, LBL, LLL, NUSC,
ORNL

Mechanical Devices and
Equipment. CEL, FSED, HDL, KSC, LaRC, MEDC,
NADC, NUSC, ORNL, SDEDC

Metallurgy. KSC, LBL, LLL, ORNL

Nuclear Technology LBL, LLL, ORNL

Optics and Lasers. KSC, LaRC, NUSC, ORNL

APPLICATION AREA

LABORATORY

Ordnance KSC

General. LASL, LeRC, MERADCOM, NWC, ORNL

HEALTH PLANNING

Agency Administration and
Financial Management KSC

Community and Population
Characteristics. EMSLR, LBL, LLL, ORNL

Data and Information
Systems. KSC, ORNL

Economics and Sociology.

Environmental and Occupational
Factors. FSR, KSC, LBL, LLL, NADC, NHRC,
NIOSH, NPRDC, NWSC, ORNL, SL

Health Care Assessment and
Quality Assurance. AMD, KSC

Health Care Forecasting
Methodology.

Health Care Delivery
Organization and Financial
Management

Health Care Measurement
Methodology. KSC

Health Care Needs and Demands. KSC

Health Care Utilization.

Health Care Technology CSL, HDL, KSC, LBL, LLL, ORNL

Health Delivery Plans, Projects
and Studies.

Health Education KSC

Health Resources KSC

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APPLICATION AREA

LABORATORY

Health-Related Costs

Legislation and Regulations. . . MDL

Personal Health Care
Services KSC

Planning Methodology KSC

General.

INDUSTRIAL AND MECHANICAL ENGINEERING

Environmental Engineering. . . . CERL, KSC, LBL, NADC, NSWC, NUSC,
NWC, NWSC, ORNL, TARADCOM, WES

Hydraulic and Pneumatic
Equipment. CEL, HDL, KSC, MERADCOM, NADC, NOSC,
NWC, WES

Industrial Safety
Engineering. KSC, LLL, MERADCOM, NADC, NIOSH,
NWC, ORNL

Job Environment. NADC, NWC, NWSC

Manufacturing Processes and
Materials Handling AFML, HDL, KSC, LASL, LBL, LeRC, LLL,
NSWC, NWC, NWSC

Nondestructive Testing AFESC, AFML, AMRC, CERL, DTNSRDC,
KSC, LeRC, LASL, LeRC, LLL, MERADCOM,
NADC, NOSC, NSWC, NUSC, NWC, NWSC,
ORNL, WES

Production Planning and
Process Controls CERL, KSC, LLL, NWC, NWSC

Plant Design and
Maintenance. CERL, KSC, NWC, NWSC, WES

Quality Control and
Reliability. AMRC, KSC, LASL, LeRC, LLL, MERADCOM,
NSWC, NWC, NWSC

APPLICATION AREA

LABORATORY

Solvents, Cleaners and
Abrasives. AFML, LLL, MERADCOM, NADC, NWC

Wood and Paper Products. FSR, MERADCOM

General. ARRADCOM, CSL, FBI, KSC, LASL, NADC,
NRL, WES

MATHEMATICAL SCIENCES

Algebra and Number Theory. LaRC, LASL, LBL, LLL, NOSC, NSWSC

Analysis (Mathematics) BNL, KSC, LaRC, LASL, LLL, NADC,
NOSC, NSWSC, NWC, NSWSC, ORNL

Geometry LASL, LBL, LLL, NOSC, NSWSC

Mathematical Logic AFWAL, BNL, LaRC, LASL, LLL, NOSC,
NSWC, NWC, ORNL

Operations Research. AFWAL, AFWL, CERL, HDL, KSC, LASL,
LBL, LLL, NADC, NCSL, NOSC, NPRDC,
NRDC, NSWSC, NUSC, NWC, NSWSC, WES

Statistical Analysis AFWAL, BNL, CERL, CSL, KSC, LaRC,
LASL, LBL, LLL, NADC, NOSC, NPRDC,
NSWC, NWC, NSWSC, ORNL

Systems Analysis CSL

General. AFWAL, ARRADCOM, BNL, ETL, LASL, LBL,
LLL, NUSC, NWC

MEDICINE AND BIOLOGY

Anatomy. AMD, NOSC, ORNL

Biochemistry CSL, HERLR, LASL, LBL, LLL, NADC,
NBL, NHRC, NOSC, ORNL

Botany ETL, FSR, ORNL, WES

Clinical Chemistry HERLR, LBL, MDL

Clinical Medicine. AMD, HERLR, LBL

<u>APPLICATION AREA</u>	<u>LABORATORY</u>
Cytology, Genetics and Molecular Biology	HERLR, LASL, LBL, LLL, NADC
Dentistry	AMEDC
Ecology	ADPG, CSL, FSR, LBL, LLL, NOSC, ORNL, SL, WES
Electrophysiology	HERLR, LBL, MDL, NOSC
Hematology	AMRDC, MDL, ORNL
Immunology	FBI, HERLR, LASL, MDL, NBL
Microbiology	ADPG, LLL, MDL, NBL, NRDC, NWSC, ORNL, SL
Nutrition	NOSC, NRDC
Occupational/Physical Therapy and Rehabilitation	NHRC
Parasitology	
Pathology	LBL
Pest Control	MEDC, WES
Pharmacology and Pharmacological Chemistry	CSL, NBL
Psychophysiology	HERLR, NADC, NHRC
Physiology	HERLR, NADC, NCSL
Psychiatry	NHRC
Public Health and Industrial Medicine	AMRDC, LASL, LBL, NBL
Radiobiology	AMD, BNL, HERLR, LASL, LBL, LERC, LLL, NADC, NRL, ORNL
Stress Physiology	AMD, LBL, NADC, NHRC
Surgery	

APPLICATION AREA

LABORATORY

Toxicology ADPG, AMD, CSL, HERL, LASL, NBL, NWC,
NWSC, ORNL

Zoology NOSC, ORNL, WES

General ARRADCOM, BNL, KSC, NIOSH, ORNL

NATURAL RESOURCES AND EARTH SCIENCES

Cartography ETL, FSED, LBL, USGS

Forestry AFESC, BIFC, FFL, FSED, FSR, INT,
MEDC, NC, NE, NWSC, ORNL, PNW, PSW,
RM, SDEDC, SE, SO

Geology and Geophysics AFGL, AFWL, KSC, LASL, LBL, LLL,
ORNL, SL, USGS, WES

Hydrology and Limnology LLL, ORNL, USGS, WES

Mineral Industries FSR, LASL, LLL, USGS

Natural Resource Management AFESC, FSED, FSR, MEDC, NWSC, ORNL,
SDEDC

Natural Resource Surveys AFGL, CERL, FSED, FSR, LASL, LeRC,
LLL, ORNL, USGS

Snow, Ice and Permafrost CEL, LeRC, NSWC, WES

Soil Sciences AFGL, AFWL, FSED, MEDC, NWC, SDEDC,
WES

General ETL, LASL, ORNL, WES

NAVIGATION, GUIDANCE AND CONTROL

Control Devices and
Equipment AFAL, AFWL, KSC, LeRC, LASL, NADC,
NOSC, NSWC, NUSC, NWC, SL

Guidance Systems AFAL, KSC, LeRC, NOSD, NDSC, NSWC,
NUSC, NWC, NWSC

Marine Navigation Technology CGRDC

APPLICATION AREA

LABORATORY

Navigation and Guidance System

Components. ETL, KSC, LaRC, NADC, NOSC, NSWC,
NWC, NWSC

Navigation Systems. AFAL, ETL, KSC, LaRC, NADC, NCSL,
NSWC, NUSC, NWSC, WES

General. AFAL, LaRC, NWC, TSC

NUCLEAR SCIENCE AND TECHNOLOGY

Fusion Devices
(Thermonuclear). LaRC, LASL, LBL, ORNL

Isotopes. AMD, LASL, LBL, LLL, NADC, NSWC,
ORNL

Nuclear Auxiliary Power
Systems. AFAPL, AFWL, LaRC, LASL, LLL, NSWC

Nuclear Explosions and
Devices. AFWL, CEL, LASL, NSWC, NWSC, ORNL,
WES

Nuclear Instrumentation. AFWL, BNL, HNL, LASL, LBL, LLL,
NOSC, NSWC, ORNL, WES

Radiation Shielding, Protection
and Safety. AFWL, LASL, LBL, LLL, NOSC, NSWC,
ORNL, WES

Radioactive Wastes and
Radioactivity. BNL, HERLR, LASL, LLL, NOSC, ORNL,
WES

Reactor Engineering and Nuclear
Power Plants. AFWL, LASL, LLL, NSWC, ORNL

Reactor Fuels and Fuel
Processing. LASL, LLL, ORNL

Reactor Materials. LASL, LLL, ORNL

Reactor Physics. AFAPL, AFWL, LASL, LLL, NSWC, ORNL

General. BNL, KSC, LASL, ORNL

APPLICATION AREA

LABORATORY

OCEAN TECHNOLOGY AND ENGINEERING

Biological Oceanography LBL, NBL, NOSC, NUSC

Domestic and Polar Ice
Technology CGRDC

Dynamic Oceanography LASL, NOSC, NUSC, WES, WFC

Effects of Ocean Dumping of
Dredged Material WES

Hydrography NOO, WES

Marine Engineering DTNSRDC, NOO, NOSC, NUSC, WES

Marine Fire and Safety
Research CGRDC

Marine Geophysics and
Geology CEL, NADC, NOO, NOSC, USGS, NWC,
WES

Oceanographic Vessels,
Instruments and Platforms CEL, KSC, LARC, NADC, NOO, NOSC,
NUSC, NWC

Physical and Chemical
Oceanography CEL, NADC, NOSC, NUSC, SL, WES

Search and Rescue Technology CGRDC

Underwater Construction and
Habitats CEL, NOSC, WES

General LBL

ORDNANCE

Ammunition, Explosives and
Pyrotechnics ADPG, AFWL, AMMRC, ARRADCOM, CSL,
KSC, LASL, NSWC, NWC, NWSC, SL

Armor AMMRC, CSL, LASL, NSWC, NWC, WES

APPLICATION AREA

LABORATORY

Bombs.	ARDC, LASL, NSWC, NWC, NWCS, SL, WES
Combat Vehicles.	NWC, NWSC, WES
Detonations, Explosion Effects and Ballistics	AFWL, AMMRC, ARRADCOM, CEL, CSL, KSC, LASL, NSWC, NWC, NWSC, SL, WES
Fire Control and Bombing Systems.	ARRADCOM, NADC, NOSC, NSWC, NWC, NWSC, SL
Guns	ARDC, NSWC, NWC, NWSC
Rockets.	LASL, NSWC, WFC, NWC
Underwater Ordnance.	LASL, NOSC, NSWC, NUSC, NWC, NWSC
General.	LASL, NSWC, NWC

PHOTOGRAPHY AND RECORDING DEVICES

Holography	AFAL, AFAPL, AMMRC, ETL, KSC, LASL, LLL, NADC, NOSC, NSWC, NUSC, NWC, SL
Photographic Techniques and Equipment.	ADPG, AFAL, AFWL, ETL, KSC, LASL, LERC, LLL, NADC, NSWC, NUSC, NVEDL, NWSC, SL, WES
Recording Devices.	AFAL, ETL, KSC, LASL, LLL, NADC, NOSC, NUSC, NVEDL, NWSC, WES
General.	KSC, NADC, NSWC

PHYSICS

Acoustics.	AFAL, AFWL, CERL, KSC, LARC, LASL, LERC, LLL, MERADCOM, NADC, NOSC, NSWC, NUSC, NWC, NWSC, SL, WES
Fluid Mechanics.	AFAPL, AFML, AFWL, HDL, LARC, LASL, LERC, LLL, NADC, NOSC, NSWC, NUSC, SL, WES

APPLICATION AREA

LABORATORY

Optics and Lasers. AFAL, AFAPL, AFGL, AFWL, AMD, AMMRC,
HDL, KSC, LaRC, LASL, LeRC, LLL,
NADC, NQSC, NRL, NSWC, NUSC, NVEDL,
NWC, NWSC, ORNL, SDEDC, SL, WES

Solid State Physics. AFAL, AFAPL, AMMRC, ARRADCOM, HDL,
LaRC, LASL, LBL, LeRC, LLL, NADC,
NOSC, NRL, NSWC, NVEDL, NWC, ORNL,
SL

Structural Mechanics. AFAPL, AFWL, AMMRC, CEL, CERL,
LaRC, LeRC, LLL, MERADCOM, NADC,
NOSC, NRL, NUSC, NWC, NWSC, ORNL,
SL, WES

Plasma Physics. AFAL, AFWL, HDL, LaRC, LASL, LBL,
LeRC, LLL, NADC, NSWC, ORNL, SL

Radio Frequency Waves. AFAL, AFGL, AMD, HDL, KSC, LaRC,
LASL, LLL, MERADCOM, NSWC, NUSC,
NWC, SL

General. ARRADCOM, BNL, CSL, HDL, LaRC, LASL,
LBL, MERADCOM, NRL, NSWC, NWC, SL

PROBLEM SOLVING INFORMATION FOR STATE AND LOCAL GOVERNMENTS

Economic and Community
Development. AFESC

Education.

Energy. AFESC, AMMRC, BNL, KSC, LaRC, LASL,
LBL, LeRC, LLL, MERADCOM, NOSC,
NUSC, NWC, ORNL, TSC, WES

Environment. ADPG, AFESC, AFGL, BNL, CSL, EMSLR,
IERLR, KSC, LaRC, LASL, LBL, LeRC,
LLL, MERADCOM, NBL, NOSC, NSWC,
NUSC, NVEDL, ORNL, SL, WES

Forensics (Explosives) ARRADCOM

Human Resources. KSC, NADC

APPLICATION AREA

LABORATORY

Police, Fire and Emergency
Service

.AFESC, BIFC, FBI, FEL, FFL, KSC,
LaRC, LASL, LLL, MERADCOM, NOSC,
NSWC, NUSC, NVEDL, NWC

Transportation

.FHRS, KSC, LASL, LLL, MERADCOM,
NUSC, SL, TSC

General

.ADPG, KSC, LaRC, LASL, LBL, NUSC,
NWC

TRANSPORTATION

Air Transportation

.AFESC, BIFC, HDL, LaRC, TSC, WES

Global Navigation Systems

.LaRC, NADC, NOSC, TSC

Marine Traffic Management

.CORDC

Marine and Waterway
Transportation

.DTNSRDC, MERADCOM, NCSL, NWC,
TSC, WES

Metropolitan Rail
Transportation

.LBL, TSC

Offroad Mobility or
Transportation

.WES

Pipeline Transportation

.HDL, KSC, MERADCOM, TSC

Railroad Transportation

.MERADCOM, NWC, TSC, WES

Road Transportation

.HDL, LaRC, NWC, TSC, WES

Transportation Safety

.LaRC, MEDC

General

.LASL, NWC, SL, TSC

URBAN AND REGIONAL TECHNOLOGY AND DEVELOPMENT

Communications

.KSC

Economic Studies

.CERL, LBL

<u>APPLICATION AREA</u>	<u>LABORATORY</u>
Emergency Services and Planning.KSC, LASL
Environmental Management and Planning.AFESC, CERL, FSR, KSC, MERADCOM, NOSC, WES
Fire Services, Law Enforcement and Criminal Justice.FBI, MERADCOM, NUSC, NVEOL
Health ServicesKSC
HousingCERL, FSR
Recreation.WES
Regional Administration and Planning.	
Social Services	
Transportation and Traffic Planning.AFESC, FHRS, NSWC, TSC
Urban Administration and Planning.	
GeneralNVEDL